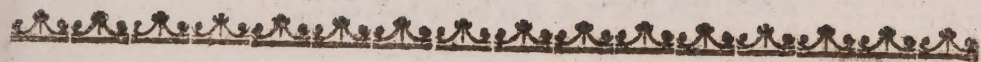


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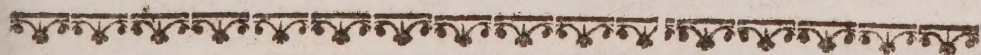


A

T R E A T I S E

O N

Putrid Intestinal Remitting Fevers.



A
T R E A T I S E
O N
Putrid Intestinal Remitting Fevers,
IN WHICH THE LAWS OF THE
FEBRILE STATE AND SOL-LUNAR INFLUENCE
BEING INVESTIGATED AND DEFINED,
ARE APPLIED TO EXPLAIN
THE NATURE OF THE VARIOUS FORMS, CRISES,
AND OTHER PHENOMENA OF THESE FEVERS;
AND THENCE IS DEDUCED AND INSTITUTED
An improved Method of curing them.

BY FRANCIS BALFOUR, M. D.
S. R. M. E. S. H.

*Eadem est veritatis et potestatis via et perfectio: Haec ipsa ut
FORMÆ verum inveniuntur; ex quarum notitia sequitur contempla-
tio vera, et operatio libera.* BACON.

E D I N B U R G H:
PRINTED BY WILLIAM SMELLIE.

MDCXC.

THE NATURE OF THE VARIOUS FORMS OF
 AND OTHER PHENOMENA OF THESE FEVERS
 IN WHICH THE LAW OF THE
 BEEN INVESTIGATED AND ILLUSTRATED
 BY WILLIAM WELLS
 AN IMPROVED METHOD OF TYPING THEM



P R E F A C E.

IN a small Treatise published at Calcutta in Bengal, about five years ago, I endeavoured to call the attention of the Medical Profession to several Propositions respecting THE INFLUENCE OF THE MOON IN FEVERS; and concluded with advancing, “ *That the whole doctrine of the crises of fevers might be explained from what I had established on this subject.*”

Although this proposition arose, rather from an anticipation of the course of nature, suggested by the discovery of several striking coincidences, than from any regular process of collecting and investigating the phenomena at large,
yet,

yet, finding that it enabled me to explain with ease all the phenomena to which I applied it, I no longer doubted of its truth ; and, being eager to communicate a discovery which promised to be of great and extensive use, I was from this motive induced to publish it in the imperfect state in which it then appeared ; expecting that it would instantly attract the notice of every physician, and that their united observations would soon supply materials for a complete demonstration.

Perceiving, however, upon the eve of my departure from India, that five years had elapsed without contributing any thing new to establish this discovery, and even that some opinions favourable to it had been very lately retracted by their respectable Author *, I instantly determined

* I mean Dr J. Lind, to refute whose new ideas on this subject it is sufficient to say, that the whole of the doctrine

ned to employ the leifure of my voyage in arranging the obfervations and remarks I had made myfelf fince my firft publication.

In this place, however, I muft not neglect to obferve, that the remarks publifhed not long ago by Dr Jackfon tend ftrongly to confirm the doctrine which we have advanced; and it has given me great fatisfaction to learn, fince my arrival in England, that Dr Cullen, in his public lectures, is difpofed to admit, in a certain degree, the operation of an influence connected with the revolutions of the fun and moon.

I.

doctrine delivered in this Treatife is confirmed by obfervations made at *Banaris*, and other places, not lefs than three hundred miles diftant from the reach of the tides.

I.

Having deduced the general laws of action affecting the present subject from certain phenomena observed and selected in the course of my own experience, and having shewn how these laws may be applied to explain and predict the other phenomena, I have thus established, agreeable to the most approved principles of philosophising *, a regular and connected system of theory, which cannot give way to any hypothesis or conjecture ; but must maintain its ground, until it be shewn, that the shape and course of the natural phenomena upon which I have reasoned are merely imaginary, or that I have seen them
through

* Vide the INTRODUCTION to this Treatise.

through a false medium, and that the interpretations and inferences to which they have led me are distorted and delusive.

The *sol-lunar influence* *, which constitutes the most active and essential principle of this new system, by most of the Authors whom I have perused on the subject of fevers, has been altogether overlooked, or disregarded; and, by the few who have observed it, and paid it attention, the laws and extent of its action being very imperfectly known, and altogether undefined, it remained till now without the support of demonstration, and stood upon no better ground than that of vague and general conjecture. If, therefore, I should assume to myself the merit
of

* *The influence* which we have observed being evidently connected with the revolutions both of the sun and moon, we have therefore called it, in this Treatise, *sol-lunar* (Vide Parag. XVIII.).

of having first demonstrated the true theory of the paroxysms, forms, and crises of these fevers, I do not conceive that I shall be guilty of any injustice to those who have gone before me.

Too partial, perhaps, to an improvement which I arrogate to myself, and therefore perhaps estimating its utility at too high a rate, I have compared its importance in medicine to that of the art of finding the longitude at sea in navigation.—Possessed of this, the navigator, having an exact idea of the bearing and distance of his port, and of all the dangers and occurrences that lie between, knows, with scientific certainty, when to crowd, and when to shorten sail, and how to steer his course.—Possessed of that, the physician, having an accurate idea of the different causes which determine the length or duration of his patient's fever, and which
produce

produce the different exacerbations and remissions which occur in its course, is acquainted with the leading circumstances that are required to enable him to form his practice on the principles of science, and to conduct his patient through the perils he encounters with ability and success.

Instructed and directed by the principles of this new system, I have formed the general rules which are laid down for conducting the cure of these fevers, and have thus brought to a conclusion all that I proposed to deliver in the FIRST VOLUME of this Treatise.

In the beginning of June 1788 this practice was explained and recommended to the medical gentlemen who acted under me in the General Hospital at Calcutta ; and the success with which it was attended gave me great satisfaction,

tion. I also delivered, at the same time, to these gentlemen, a form for recording medical cases accommodated to the system we have explained; and, as it may be found convenient for future observers, I have therefore annexed it to the end of this volume.

II.

Prefuming, from the known uniformity and steadiness of nature, that her laws and operations have ever been the same, we infer that the phenomena which these operations have produced have never differed from those that are to be observed at present; and thence we conclude, that the various histories of these fevers which are to be met with in medical books

are

are nothing more than so many different accounts, more or less accurate, of the different FORMS that are produced by the action of *The Sol-lunar Influence upon the Febrile State*, in the manner that we have seen and described them.

This being established, we substantiate, as it were, and obtain possession, of *The constant and immutable shape and course of the NATURAL FORMS * of these Fevers*, which we may employ as a fixed and infallible rule, to explain the intricacies, reconcile the contradictions, and supply the defects, that are to be found in these histories ; and as a standard or criterion to estimate the merit of the different authors who have written on this subject, from the days of Hippocrates down to the present time, by shewing how nearly they have approached to them,

or

* Vide Aphorism III. in the INTRODUCTION.

or how far they have deviated from them in their description of nature.

Advancing on this ground, we are likewise enabled to judge and criticise the theory and practice of ancient and modern times in these fevers. And proceeding still farther, we are qualified to throw new and important light on the history and nature of other diseases, and to form a new and improved system of medicine—at least for those climates where the *Sol-lunar Influence* is found to prevail.

The above applications of our system to these different subjects, for the purposes I have stated, were reserved for a SECOND VOLUME, which I meant likewise to begin in the course of the voyage; but my time draws near to an end, and finding myself obliged to relinquish this part of my undertaking, without the probability
of

of having it soon in my power to resume it, I have, for this reason, determined to publish the FIRST VOLUME by itself as soon as possible after my arrival in England.

On board of the Kent Indiaman returning from India.

May 20. 1789.

OPÈRIS CONSPECTUS.

INTRODUCTION.

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A
T R E A T I S E
O N
P U T R I D I N T E S T I N A L
R E M I T T I N G F E V E R S.

P R O B L E M I.

*TO INVESTIGATE AND DEFINE THE LAWS
OF THE FEBRILE STATE, AND OF THE
SOL-LUNAR INFLUENCE, FROM THE
PHÆNOMENA.*

C H A P T E R I.

OF A MEDICAL DIVISION OF TIME RE-
QUIRED FOR INVESTIGATING AND
DEFINING THE LAWS OF THE FEBRILE
STATE, AND OF THE SOL-LUNAR IN-
FLUENCE.

I.

DIVISIONS of time have been adopted in other
sciences, accommodated to their several purposes ;
and the following seems to be indispensably necessary

B

for

for describing the forms, and explaining the nature of these fevers; and, it is conceived, will be found well suited in other respects to the purposes of medicine.

MEDICAL PERIODS OF TIME *are,*

THE DAILY PERIODS, or such as occur in the space of a medical day, which is the space included between half an hour past eight in the morning, and the same time next day; and are,

1. *The Diurno-Meridional Period*, which includes about seven hours, viz. three and a half before, and as much after twelve o'clock mid-day;

2. *The Evening Intermeridional Interval*, which includes the space between the Diurno-Meridional and succeeding Nocturno-Meridional Period;

3. *The Nocturno-Meridional Period*, which includes about seven hours, viz. three and a half before, and as much after twelve o'clock mid-night;

4. *The morning Intermeridional Interval*, which includes the space between the Nocturno-Meridional, and succeeding Diurno-Meridional Period;

The

THE LUNAR PERIODS, or such as occur in the space of a medical month ; and are,

1. *The Novilunar Period*, which includes about seven days ; viz. three and a half before, and as much after the change of the moon ;

2. *The Post Novilunar Interlunar Interval*, which includes the space between a novilunar and its succeeding plenilunar period ;

3. *The Plenilunar Period*, which includes about seven days ; viz. three and a half before, and as much after the full of the moon ;

4. *The Post Plenilunar Interlunar Interval*, which includes the space between the plenilunar and its succeeding novilunar period.

THE ANNUAL PERIODS are such as occur in the space of a medical year ; and are,

1. *The Verno-Equinoxial Period*, which includes about seven lunar periods with their respective intervals ; viz. three and a half before, and as much after the vernal equinox ;

2. *The Summer Inter-Equinoxial Interval*, which includes the space between the verno-equinoxial and autumnal-equinoxial periods ;

3. *The*

3. *The Autumno-Equinoxial Period*, which includes about seven lunar periods with their respective intervals; viz. three and a half before and as much after the autumnal equinox;

4. *The Winter Inter-Equinoxial Interval*, which includes the space between the autumno-equinoxial and the verno-equinoxial periods.

II.

1. The Daily Periods as they occur in coincidence with the lunar and annual periods in the course of a medical year, viz. from the beginning of the verno-equinoxial period to its annual return, constitute a great variety of periods differing greatly from one another in their nature and tendency; as we shall explain hereafter.

C H A P. II.

OF THE LAWS OF THE FEBRILE STATE.

SECTION I.

PUTRID INTESTINAL REMITTING FEVERS DISTINGUISHED AND ARRANGED.

III.

I. **T**HE low obscure remitting fever answering to the description of the low nervous fever of authors ; the more distinct and regular remitting fever, answering to the description of the common remitting fever of warm climates ; and the more violent remitting fevers, corresponding with the histories of contagious, pestilential, malignant, and putrid fevers, common to jails, hospitals, ships, camps, &c. all resemble one another in the *peculiar foetor* which distinguishes their stools, and marks the seat and nature of the disease ; and likewise in all the other symptoms of the febrile state, with very little difference, except in the
degree

degree of their violence. They are all infectious; they prevail under the same circumstances of heat, moisture, confinement, &c; their laedentia and pro-dentiae are the same; they change reciprocally into one another; and the commencement, course, and termination of their meridional paroxysms are all similar, and connected in a similar manner with the daily, lunar, and annual periods.—(Vid. Ch. III. Sect. I. II. III. IV.). I have therefore, for several years past, been induced to consider them all as putrid intestinal remitting fevers.

IV.

1. From their resemblance to the fevers just described (III.), in respect of the seat and nature of the disorder, the commencement, course, and termination of the meridional paroxysms, and their connection with the daily, lunar, and annual periods (Vid. Ch. III. Sect. I. II. III. IV.); and almost every other circumstance; I have been led to imagine that all the disorders I have met with in India under the form of dysenteries; and likewise most of those under the form of pleurisy and peripneumony, acute rheumatisms, and of
many

many other local affections attended with fever, were nothing more than so many different cases of putrid intestinal remitting fever, accompanied with different local affections; and to be distinguished from one another in this respect alone.

V.

1. Agreeable to these ideas (III. IV.), all putrid intestinal remitting fevers may be arranged under the following divisions.

1. *Putrid Intestinal Remitting Fevers without Local Affection.*

2. *Putrid Intestinal Remitting Fevers with Local Affection* *.

And,

* Although I have specified and referred to these two classes such disorders only as occur most commonly, yet I suspect that many of those fevers comprehended under the general idea of pyrexiae typhodes, whether attended with exanthemata, profluvia, or other local affections, will be found, by future observation, to belong

And, except in these respects where their different local affections require remedies peculiar to their nature, I conceive that the proper method of treating all putrid intestinal remitting fevers is exactly the same.

S E C T I O N II.

THE ORIGIN AND PROGRESSION OF THE FEBRILE STATE INVESTIGATED.

VI.

1. From paying a constant attention to the state of the stools in these disorders (V.) for a great number of years, I have been led to conclude, that, in all putrid intestinal remitting fevers, the *mucus* which lines the intestines, especially the smaller, is infected, and in a putrifying state; and that this not only produces the
peculiar

belong to no other. *The puerperal Fever*, and that obscure lingering disorder, so frequent amongst children, and commonly called *the worm fever*, in every case that I have seen, appeared to belong to these divisions; and were cured in the same manner as *putrid intestinal remitting fevers*,—(Vide Prob. III.).

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INTRODUCTION.

A P H O R I S M I.

‘ **O** MNIS philosophiae difficultas in eo versari videtur, ut a phaenomenis motuum investigemus vires naturae.’ *

‘ The whole difficulty of philosophy consists in deducing the powers of nature from the phaenomena of their action.’

A P H. II.

‘ Deinde ab his viribus (Aph. I.) demonstremus phaenomena reliqua.’ †

A

‘ From

* Vide Newton Praefatione Princip.

† Vide Newton, eodem loco.

‘ From these powers (Aph. I.) we are then to explain the other phaenomena.’

A P H. III.

‘ Eadem est veritatis et potestatis via et perfectio: haec ipsa ut *formae rerum* inveniantur: ex quarum notitia sequitur contemplatio vera, et operatio libera.’*

‘ The road which leads to science leads also to art; and it consists in discovering the real *forms* of things; from which proceed clearness and certainty in judging, with freedom and decision in acting.’

All the phaenomena of putrid intestinal remitting fevers may be referred to the force and action of two different powers, viz. *the Febrile State*, and *the Solar Influence*. These aphorisms, therefore, prescribed by great authorities in philosophy, suggest three different problems which require to be solved in prosecuting this subject.

P R O B.

* Vide Bacon, Aph. et Confil. de Auxil. Ment. ad access. lum. Natural.

P R O B L E M I.

*TO INVESTIGATE AND DEFINE THE LAWS
OF THE FEBRILE STATE, AND OF THE
SOL - LUNAR INFLUENCE, FROM THE
PHENOMENA.*

P R O B L E M II.

*TO EMPLOY THE LAWS OF THE FEBRILE
STATE, AND OF THE SOL-LUNAR INFLU-
ENCE, TO EXPLAIN THE NATURE OF THE
VARIOUS FORMS AND CRISES OF PUTRID
INTESTINAL REMITTING FEVERS; AND
OTHER PHENOMENA.*

P R O B L E M III.

*TO EMPLOY THE KNOWLEDGE WE HAVE
OBTAINED OF THE NATURE OF THE VA-
RIOUS FORMS, &c. OF PUTRID INTESTI-
NAL REMITTING FEVERS, TO DEDUCE
AND INSTITUTE AN IMPROVED METHOD
OF CURING THEM.*

In prosecuting the solution of these Problems, the following Aphorisms present themselves as rules to direct and regulate our conduct.

A P H. IV.

‘ Frustra magnum expectatur augmentum in scientiis ex superinductione et insitione Novorum super vetera, sed instaurationis faciendæ ab imis fundamentis, nisi libeat perpetuo circumvolvi in orbem, cum exili, et quasi contemnendo progressu *.’

‘ It is in vain that we expect any considerable advancement in the sciences from introducing and erecting the New upon the Old. Improvement must begin from the lowest foundation; unless we be satisfied to continue perpetually going round in a circle, with a small and contemptible progress.’

A P H.

* Vide Bacon, Nov. Organ. Aph. xxxi.

A P H. V.

‘ Canones, sed tamen mobiles, five axiomata inchoata,
 ‘ quae nobis inquirentibus, non pronuntiantibus, se of-
 ‘ ferunt, prescribimus et constituimus. Utiles enim
 ‘ sunt, si non prorsus veri *.’

‘ But the propositions which we advance and pro-
 ‘ pose are no more than moveable canons, or axioms
 ‘ only just begun; which present themselves to us, in
 ‘ the course of our inquiry, unprepared to pronounce
 ‘ finally. ‘ They will, however, be useful, although
 ‘ they may not be perfect or strictly true.’

And, to bespeak from our readers a patient and can-
 did examination of the different propositions we have
 been

* Vid. Bacon Norm. Histor. Natur. ad Condend. Phi-
 losophiam.

been led to advance in the course of this investigation, we shall conclude our introduction with another Aphorism, laid down as a rule in philosophising by the immortal Newton.

A P H. VI.

‘ In philosophia experimentalī, propositiones ex
 ‘ phaenomenis per inductionem collectae, non obstan-
 ‘ tibus contrariis hypothefibus, pro veris aut accurate,
 ‘ aut quam proxime haberi debent, donec alia occurre-
 ‘ rint phaenomena, per quae aut accuratiores reddan-
 ‘ tur, aut exceptionibus obnoxiae. Hoc fieri debet ne
 ‘ argumentum inductionis tollatur per hypothefes * †.’

‘ In experimental philosophy, propositions obtained
 ‘ from the phenomena by induction, ought to be held,
 ‘ not-

* ‘ Quicquid ex phaenomenis non deducitur, hypo-
 ‘ thefis vocanda est.’

‘ All opinions not deduced from the phenomena are
 ‘ mere hypotheses.’—Vid. Newton. Princip. pag. 530.

† Vid. Newton. Princip. Regul. Philosophandi iv.

‘ notwithstanding any opposite hypotheses, as strictly,
‘ or very nearly true, until other phenomena have oc-
‘ curred, by which they may be rendered either more
‘ accurate or more exceptionable.

‘ This is required, that reasoning founded on induc-
‘ tion may not be overturned by a mere hypothesis.’

peculiar foetor which distinguishes the seat and nature of the disease; but, being absorbed and mixed with the blood, becomes the cause of that remarkable change in the system which constitutes *The Febrile State*.

VII.

1. With regard to the introduction of the contagion which produces the disease, and its progress and operation, our sentiments are these :

That, in most cases, it is probable that the contagious matter is first conveyed into the stomach and bowels along with the saliva *.

That it seems also established by experience, that the contagious matter, after being received into the stomach and bowels, may again be discharged, after remaining a considerable interval, without producing the

C

febrile

* We do not deny the production of putrid fevers by infectious matter, admitted directly into the blood by the absorbents on the surface of the fauces and lungs, and in other parts of the body, without passing into the stomach and intestines; and there is no doubt that fevers are also produced by the absorption of putrid matter, generated on many occasions in the body itself, without any infection.

febrile state ; and thence we conclude, that the action of the contagious matter in the stomach and bowels is not sufficient to produce the febrile state, unless it be permitted to remain there for a certain length of time.

And, further, that the contagion is, in all cases, found to proceed from some putrifying or putrid body ; and therefore may be supposed to operate by producing putrefaction, especially as the mucus of the intestines is a substance, from its animal nature, loose texture, and warm situation, in a singular manner exposed to this change ; and, in every case where I have had an opportunity of observing it, in the stools, was in a putrifying state.

2. From these premises we conclude, first, that, in a certain time, the contagious matter operates, in the first instance, by infecting and corrupting the mucus of the intestines ; and that, in all cases of putrid, intestinal, remitting fevers, the mucus of the intestines is first of all corrupted. We conclude, secondly, that the corrupted mucus being constantly applied to the mouths of the absorbents which cover the intestines, the absorption of a certain quantity of it is unavoidable ; and consequently that a certain quantity is actually absorbed.

bed. Thirdly, We conclude, that the corrupted matter, thus absorbed, produces the febrile state; because we know that a fever similar to this is produced by the absorption of corrupted animal matter from other parts; because the febrile state does not take place in cases where the absorption is prevented by early evacuations; and because the febrile state, as far as I have been able to discern, is always in proportion to the presumable quantity and acrimony of the matter absorbed; that is to say, that the degree of the febrile state is constantly increased when the contents of the bowels are long retained, and are become highly offensive, and as constantly prevented from increasing, when they are maturely and completely evacuated. Fourthly, we conclude that the corrupted matter continues to support the febrile state, sometimes for a great length of time; and probably until some favourable change, (Vide XXVIII. 8.) in the state of the body disposes it to be evacuated by the skin, kidneys, &c. or until it be counteracted by certain medicines*. And we conclude ultimately, that, by preventing the absorption

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* Particularly the Peruvian Bark.

tion of the corrupted matter from the intestines, by an early and complete evacuation of their mucus, and other contents at the beginning, the febrile state, and all its consequences, may be effectually prevented from taking place.

S E C T I O N III.

THE LEADING SYMPTOMS OF THE FEBRILE STATE ENUMERATED.

VIII.

1. The febrile state of putrid intestinal remitting fevers, shews itself by a peculiar putrid foetor of the stools, in which the mucus appears in a loose, frothy, putrifying state; by an increase of the heat of the body, restlessness, and frequency of the pulse, denoting irritation; by costiveness, and other circumstances denoting a spasmodic constriction of the intestinal canal *; by appearances in the state of the urine, denoting

* *The tendency to costiveness, with a preternatural constriction of the bowels, constitutes a diagnostic, so constant,*

ing a spasmodic affection of the kidneys ; by circumstances in the state of the perspiration, denoting a spasmodic affection of the skin ; by a particular state of the tongue, denoting a spasmodic affection of the vessels on its surface ; by circumstances in the secretion of the bile, denoting a spasmodic affection of the secreting vessels, or of the ducts through which it passes
into

stant, striking, and distinguishing, and so common to all the fevers I have ever met with, and throws so great a light upon the nature and symptoms of these disorders, and the method of curing them, that I should be greatly inclined to give it a place in the general character of the class of Pyrexia. But this is not all : From the observations I have made in India, not only upon men, but upon dogs and horses, I am much inclined to believe, that in all animals, even when in health, there prevails in the bowels, during the Lunar periods, *a stronger tendency to contract, and to retain their faeces, than during the interlunar intervals.* And should this opinion be confirmed by future observation, considering the great proportion of blood that is given to the intestines, we conceive that it will go a great length to account for the periodical plumpness of particular animals at the Lunar periods ; and for many phenomena in the human oeconomy, particularly in the constitution of females, which have never been well understood.

into the intestines*; by disturbed sleep, flushing of the face, redness of the eyes, tendency to delirium and headach, and other symptoms, denoting a determination towards the head; and by a loss of appetite, exertion, and strength, with other symptoms, not so easily referable to any obvious or immediate cause.

SECTION IV.

THE NATURE OF THE FEBRILE STATE INFERRED.

IX.

I. From the above history (VIII.) we are led to imagine, that the febrile state consists in a *spasmodic affection*
of

* At the very beginning of putrid intestinal remitting fevers, and also about the time of their final crisis and termination, I have often observed copious discharges of recent bile; but, as the fever advanced, and remained at its height, such discharges have frequently ceased to appear; and I have been led to suspect, from these circumstances, that the passage of the bile into the duodenum, during this interval, was altogether stopt; and that there was a spasm on the duct, which did not yield until the fever began to give way, or tend towards a solution.

of the vascular system, excited and supported by the morbid matter absorbed from the intestines into the blood, and manifesting itself in a particular manner in the state of the small vessels of the tongue, skin, and kidneys.

SECTION V.

THE LAWS OF THE FEBRILE STATE DEDUCED
AND DEFINED.

X.

1. Seeing that the spasmodic disposition and morbid matter may each of them exist in a great variety of modes and degrees, all capable of being combined with each other, we deduce from these premisses the following axiom, with regard to the nature and power of the febrile state.

AXIOM

A X I O M I.

The possible modifications of the febrile state are exceedingly numerous and different in their nature from each other ; and consequently in their power to concur in producing and supporting meridional paroxysms. (XI.)

2. A second axiom respecting that change in the febrile state, by which the meridional paroxysms are determined to *subside and come to an end*, will be established hereafter (XXVIII.)

CHAP.

C H A P. III.

OF THE LAWS OF THE SOL-LUNAR IN-
FLUENCE.

S E C T. I.

OF THE ORIGIN OF THE MERIDIONAL PAROXYSMS
OF THE FEBRILE STATE.

I. **I**N the course of a very careful attention to this subject for many years, I have observed that, during the diurno-meridional and nocturno-meridional periods, the symptoms of the febrile state are liable to certain remarkable exacerbations, which very rarely attack at any other times ; and which we have therefore denominated *Diurno-Meridional*, and *Nocturno-Meridional Paroxysms*.

D

S E C T.

S E C T. II.

OF THE CONNECTION OF THE MERIDIONAL PAROXYSMS WITH THE MERIDIONAL PERIODS AND INTERMERIDIONAL INTERVALS ; AND THEIR DIFFERENT TENDENCIES AT THESE TIMES.

XII.

1. Under this head I have to observe, first, that as far as my experience extends, the nocturno-meridional paroxysms, whether they attack in the lunar periods, or interlunar intervals, generally appear before the diurno-meridional paroxysms, and may be discovered in the nocturno-meridional period disturbing the patient's rest, and forming only obscure nocturno-meridional paroxysms, frequently not at first recognised by the patient himself ; or scarcely recollected after the slumbers which succeed it, in the morning intermeridional remission : Secondly, that in the course of the disease the symptoms generally run considerably higher in the nocturno-meridional paroxysms than in the diurno-meridional : And thirdly, that the nocturno-meridional

paroxysms

paroxysms often continue to return in the course of the interlunar intervals after the diurno-meridional paroxysms have ceased to appear.

2. From these observations (XI. 1. and XII. 1.) we are led to this inference, ‘ That the prevailing tendency of the meridional paroxysms is to attack in the diurno-meridional and nocturno-meridional periods, and not in the intermeridional intervals; and that it is the prevailing tendency of the nocturno-meridional paroxysms to appear sooner in the beginning of the disorder, to go to a greater height in its course, and to disappear later in the end, than the diurno-meridional paroxysms.’

XIII.

1. In the evening and morning intermeridional intervals, the diurno-meridional and nocturno-meridional paroxysms are succeeded by their respective *Intermeridional Remissions*.

2. With respect to the *Evening Intermeridional Remissions*, at the beginning of the disease, they are sufficiently distinct and evident; but during its progress, especially when the symptoms run high, the fever goes
on,

on, and they are generally, in such cases, so obscure as not to be observed.

3. With regard to the *Morning Intermeridional Remissions*, they are in all cases more distinct and obvious, than those of the evening; and I have never seen the nocturno-meridional paroxysms, howsoever high the symptoms, run on into the succeeding diurno-meridional paroxysms, without some evident abatement or remission in the course of the morning intermeridional interval.

4. From these circumstances (1. 2. 3.) we draw this inference, ‘ That the prevailing tendency of the remissions of the meridional paroxysms is to take place at the intermeridional intervals, and not at the meridional periods; and that it is the tendency of the morning intermeridional remissions to be much more complete than those of the evening.’

SECTION III.

OF THE CONNECTION OF THE MERIDIONAL PAROXYSMS WITH THE LUNAR PERIODS, AND INTERLUNAR INTERVALS; AND OF THEIR DIFFERENT TENDENCIES AT THESE TIMES.

XIV.

1. Meridional paroxysms, whether diurnal or nocturnal, almost universally make their first appearance in one of the seven days included in the *lunar periods* *, sometimes towards the beginning, sometimes towards the middle, and sometimes towards the end.

2. During the lunar periods, the nocturno-meridional paroxysms may generally be discerned earlier, as we have already observed (XII.), than the diurno-meridional. But these likewise soon appear, and become conspicuous; and, for the most part, after a few returns,

* The lunar period in which the meridional paroxysms make their first appearance is denominated *The First Lunar Period*; and that which succeeds is denominated *The Second Lunar Period*; and so on.

turns, increase in their violence, and run on, without any obvious abatement, through the evening intermeridional interval; and, being confounded with the succeeding nocturno-meridional paroxysms, no remission is observed to take place until the morning intermeridional interval. The diurno-meridional paroxysm running on in this manner, forms, as it were, only one continued paroxysm; and this is the form which they generally assume in the course of the lunar periods; especially towards the 4th, 5th, 6th, and 7th day *.

3. Whilst the meridional paroxysms almost always make their appearance (1.), and increase in their violence (2.) during the lunar periods, it is no less remarkable, that they seldom, and almost never, disappear

* Diurno and nocturno-meridional paroxysms, distinguished by the intervention of distinct intermeridional remissions, are denominated *Single Meridional Paroxysms*.

A diurno-meridional paroxysm, running into a nocturno-meridional paroxysm in the manner described in this paragraph, and forming with it, as it were, only one continued paroxysm, constitutes what we shall call in future *A Double Meridional Paroxysm*.

pear or subside of their own accord, so long as the lunar periods last.

4. The meridional paroxysms, after having made their attack, and gone through the first lunar period, either disappear at once, on the commencement of *the first interlunar interval* *, or becoming much more slight and obscure, and generally nocturnal, diminish daily, and disappear gradually, in the course of the interval; or still running on in a moderate manner, through the whole of the interval, enter into *a second lunar period*.

5. Having entered into a second lunar period, the meridional paroxysms suffer an exacerbation, nearly similar to that which they suffered in the first; and thus continue going on, till the commencement of *the second interlunar interval*.

6. Upon the commencement of the second interlunar interval, the febrile state, for the most part, disappears, and the meridional paroxysms cease to return;

or

* The interlunar interval which succeeds the first lunar period is denominated *The First Interlunar Interval*; and that which succeeds the second lunar period is denominated *The Second Interlunar interval*; and so on.

or continue only for a few days obscurely, and subside gradually; and terminate, sooner or later, in the course of the interval.

7. Although the more common course of the meridional paroxysms is to cease in the first and second interlunar intervals, it is, however, not uncommon for them to continue through many more successive lunar periods, and interlunar intervals, with the alternate exacerbations and abatements that are peculiar to each stage. In cases of this kind, the symptoms of the meridional paroxysms becoming less violent, the lunar periods are consequently less strongly distinguished. And, in the interlunar intervals, it often happens that a feverish quickness in the pulse is the only evident symptom that remains of the febrile state; and shews that the disease, not being come to a final termination, lurks within, and that there is still reason to apprehend a return or relapse. But, however obscurely the symptoms may proceed, they may, in most cases, be traced by a proper attention; and I have marked their progression to a 3d, 4th, 5th, 6th, and even 7th interlunar interval.

8. From

8. From these observations respecting the connection of the meridional paroxysms with the lunar periods, we are led to the following inference: ‘That
 ‘ the prevailing tendency of the meridional paroxysms
 ‘ is to make their attack, to increase in their violence,
 ‘ and to continue during the course of the lunar pe-
 ‘ riods; and that, as far as we have been able to dis-
 ‘ cern, there is no difference, in this respect, between
 the novilunar and plenilunar periods.’

XV.

1. Meridional paroxysms sometimes make their at-
 tack in the interlunar intervals *; but seldom in pro-

E

portion

* The interlunar interval in which the meridional paroxysms make their first attack, is denominated *The Exciting Interlunar Interval*; and the lunar periods, and interlunar intervals subsequent to it, are distinguished as *first, second, third, &c.* in the order in which they occur, just as in the case of those making their first attack in the lunar periods:—by which means the course, duration, and forms of these fevers, whether they attack in the interlunar interval, or in the lunar period, are described exactly in the same terms, and without any confusion; as will be seen hereafter in the table of forms.

E

portion to the frequency of their attacks in the lunar periods ; and running on, in different cases, for a longer or shorter time, just like meridional paroxysms which attack in the lunar periods, terminate also, as these do, sooner or later, in the different interlunar intervals.

2. But it is remarkable that, when the meridional paroxysms make their first attack in the interlunar intervals, it is generally towards the end of the interval, and not more than two or three days before the beginning of the lunar period ; and I have seldom observed them making their first appearance at the beginning, and almost never at the middle of the interval.

3. Examples of meridional paroxysms beginning in the interlunar intervals happening seldom in proportion to those which begin in the lunar periods, lead to a different inference with respect to their tendency ; and only authorise us to say,

‘ That there is likewise a tendency in the meridional
 ‘ paroxysms to attack in the interlunar intervals,
 ‘ which, however, compared to that which prevails in
 ‘ the lunar periods, is weak and inconsiderable ; and
 ‘ that their prevailing tendency at these junctures in-

clines

clines them strongly to defer their attack, to abate in their violence, and finally to terminate and disappear. In the post-novilunar and post-plenilunar intervals, the tendency seems to be equal ; and in both it appears to be greater towards the end and beginning than in the middle.

SECTION IV.

OF THE CONNECTION OF THE MERIDIONAL PAROXYSMS WITH THE EQUINOCTIAL PERIODS AND THE INTER-EQUINOCTIAL INTERVALS; AND THEIR DIFFERENT TENDENCIES AT THESE TIMES.

XVI.

1. Putrid intestinal remitting fevers have their meridional paroxysms much more violent and obstinate during the equinoctial periods than the inter-equinoctial intervals ; and this is far more remarkable in the autumnal-equinoctial, than in the vernal-equinoctial period.

2. From what has been said (1.), it is to be inferred,
 ‘ That the tendency of the meridional paroxysms to
 ‘ be violent, and to continue, in the verno-equino-
 ‘ tial and autumnno-equinoctial periods, is much greater
 ‘ than in their respective inter-equinoctial intervals ;
 ‘ and especially in the autumnno-equinoctial periods.’

XVII.

1. With respect to the tendency of the inter-equi-
 noctial intervals, my observations do not enable me to
 make any accurate comparison ; and I can only say,
 ‘ That, during both, it is inferior to that which pre-
 ‘ vails at the equinoctial periods.’

S E C T. V.

THE LAWS OF THE SOL-LUNAR INFLUENCE DE-
 DUCED, AND DEFINED.

XVIII.

1. These different prevailing tendencies (XII. 2. XIII.
 4. XIV. 8. XV. 3. XVI. 2. XVII. 1.) so remarkable
 in

in the history of meridional paroxysms being constantly and invariably connected with certain periods of time, during which the sun, moon, and earth are particularly situated, with regard to each other, we are naturally led to refer them to some power or influence connected with the relative positions of these bodies ; which having assumed as an established principle, or law of nature, we denominate *The Sol-Lunar Influence* : without pretending to say whence it proceeds, where it exists, or how it operates. We must however suggest, that, as the periodical revolutions which are observed in the state of the meridional paroxysm, coincide in a striking manner with the revolutions or paroxysms in the state of the tides, it is more than probable that they are produced and governed, by the power and energy of a common cause.

2. Estimating the power of the sol-lunar influence, by the effects which it produces upon the febrile state at different periods, we are led to the following conclusions ; which we think may be assumed for the present as so many axioms or laws respecting its *force* and *action*.

A X I O M

A X I O M I.

The force of the sol-lunar influence is much greater during the meridional periods than their respective intermeridional intervals, and seems to be somewhat greater during the nocturno than their respective diurno-meridional periods ; and somewhat greater during the evening than the morning intermeridional intervals.

A X I O M II.

The force of the sol-lunar influence is much greater during the lunar periods, than their respective interlunar intervals ; and during the novilunar and plenilunar periods it is very nearly the same ; and also during their respective interlunar intervals, at the beginning and end of which it seems greater than in the middle.

A X I O M

A X I O M III.

The force of the sol-lunar influence is considerably greater during the equinoxial periods than their respective inter-equinoxial intervals ; and somewhat greater during the autumnno-equinoxial than the verno-equinoxial periods.

P R O B L E M

P R O B L E M I I.

*TO EMPLOY THE LAWS OF THE FEBRILE
STATE, AND SOL-LUNAR INFLUENCE TO
EXPLAIN THE NATURE OF THE VARIOUS
FORMS AND CRISES OF PUTRID INTESTI-
NAL REMITTING FEVERS; AND OTHER
PHAENOMENA.*

C H A P T E R I.

OF THE FORMS OF PUTRID INTESTINAL
REMITTING FEVERS.

S E C T I O N I.

OF THE DIVERSITY OF THEIR FORMS WITH RE-
SPECT TO LENGTH OR DURATION.

XIX.

I. **T**HE meridional paroxysms attacking in the man-
ner we have described (XI. XII. XIII. XIV.
XV. XVI.), and continuing, in different cases, for a
greater

greater or smaller number of days form different groups, or successions of paroxysms, which constitute fevers of various lengths or durations, from fevers of one day to fevers of one hundred, or upwards ; in the manner represented in the Synoptical Table (Plate I.). It is probable that fevers run on occasionally to a much greater length than one hundred days ; but two or three of about this length are the longest that I have traced with any certainty.

2. As no meridional paroxysms ever pass *the commencement* of these interlunar intervals in which they terminate, without some *sudden and conspicuous abatement or remission in the degree of their violence, such as does not occur at other times*, those remarkable changes are apt to be considered as *critical and final solutions* of these fevers ; and we have every reason (XIV. 4. XV.) to believe that they have, in most cases, both in ancient and modern times, suggested and fixed the idea of their length and duration.

Upon this ground, I have exhibited, in the Synoptical Table, (Plate I.) such varieties only, in the duration of fevers, as are supposed to be limited, and formed

by the abatement of their violence, on the first day of that interlunar interval, in which they terminate ; desiring, at the same time, that it may be understood that the meridional paroxysms seldom cease or terminate all at once, immediately on the commencement of the final interlunar interval ; but often continue to return, as we have already observed, (XIV. 4. 6. 7. XV. 1. 3.), in a more moderate degree ; and at last subside and disappear in the course of it, gradually and imperceptibly.

Prefuming that Hippocrates and his followers calculated the durations of fevers by the space of a natural day, or twenty-four hours, I have endeavoured to preserve the same measure. And it is hoped that this Table (Plate I.) will answer the purpose of giving a tolerably distinct idea of the manner in which the different forms of these fevers are connected with the lunar periods and interlunar intervals. But it is to be remembered that every interlunar interval actually contains about eighteen hours and twenty-two minutes, more than the seven days which are given to them in the Table. A due allowance, therefore, must be made for this deficiency in

in attending to the course of these fevers through the interlunar intervals, and in reckoning their real duration exactly. To avoid this defect in our Table, it would have been necessary to adopt such a division of time, less than a natural day, as would have divided the real space of time included in the interlunar intervals without a fraction. But, as that would have introduced new terms, and a less familiar mode of measuring the duration of fevers; rather than subject our system to this inconveniency, I have chosen to fall short in point of precision. And, when it is known that Hippocrates likewise found it impossible * to measure the length of fevers exactly by entire days; and that his account of them, which is that which I am to consider chiefly in prosecuting this subject, must also be liable to a similar

* Hippocrates expresses himself upon this subject in these terms : ‘ Non potest autem quicquam horum integris diebus exacte numerari ; neque enim annus et menses integris diebus numerari possunt.’

‘ But none of these can be measured exactly by complete days ; neither can the year itself, nor even months.—Hippocrates Praenotiones, Sect. XX.

milar defect, we presume that the latitude we have taken will appear to be of less consequence, especially as we have pointed out a method by which it may be easily adjusted.

It is further to be observed, that this Table supposes the commencement of the lunar periods and interlunar intervals to happen nearly about the beginning of a natural civil day ; and is therefore calculated to represent the formation of fevers at one fixed period of time only. But it will naturally occur, that no fixed Table can represent in a proper manner the constant shifting of the commencement and termination of such fevers from one time of the day to another, depending on the varying coincidence of the lunar with the diurnal and nocturnal meridional periods ; and that this variation must therefore be always attended to in discovering and calculating the real duration of fevers exactly.

In consulting this Table, it is necessary to remember the following circumstances.

1st, That single dots represent single meridional paroxysms.

2d, That double dots represent double meridional paroxysms.

3d, That the whole of the dots upon any one horizontal line represent a complete group or succession of paroxysms constituting a fever.

4th, That the first dot on the left represents the first meridional paroxysm of the group.

5th, That the first dot on the right represents the final meridional paroxysm of the group.

6th, That, although single meridional paroxysms will appear, from the Table, to be confined to the interlunar intervals, and double meridional paroxysms to the lunar periods, it will however be understood, from what has been already said on this subject (XIV.), that this is not strictly or invariably true; and that they are represented here in this manner only to denote their prevailing or general tendency and course.

3. As the meridional paroxysms of fevers never fail to show some very conspicuous abatement, in the degree of their violence, not only at the commencement of the interlunar intervals in which they terminate, but likewise at the commencement of every interlunar inter-

val

val that occurs previously to the final one in the course of the disorder, these remarkable abatements, in the sequel, shall be called *The Interlunar Crises*; which being distinguished according to the order in which they occur, will be denominated, *First, Second, Third, Fourth, &c. Interlunar Crises*. But, to distinguish the last or terminating interlunar crisis, in a particular manner, from others which may precede it in the course of the fever, that shall be denominated, in the sequel, *The final Interlunar Crisis*, and these, *Intermediate Interlunar Crises* *.

4. And, in order to distinguish the interlunar interval in which the final interlunar crisis takes place from that in which an intermediate interlunar crisis happens, the former shall be called a *Final*, and the latter an *Intermediate Interlunar Interval*.

S E C-

* It is more than probable that the *crises* which Hippocrates describes by the words ‘*imperfecte judicabantur*,’ were nothing more than *intermediate interlunar crises*; and that those to which he applies the terms *perfecte judicabantur* were *final interlunar crises*.—Vide Popular. ubique.

A TABLE
Constructed to shew the different Forms of Putrid, Intestinal Remitting Fevers;
and the manner in which they are Connected with the Lunar periods, and Interlunar Intervals.

	Interlunar Interval	Lunar Period	Interlunar Interval	Lunar Period	Interlunar Interval	Lunar Period	Interlunar Interval
	1 2 3 4 5 6 7	1 2 3 4 5 6 7	1 2 3 4 5 6 7	1 2 3 4 5 6 7	1 2 3 4 5 6 7	1 2 3 4 5 6 7	1 2 3 4 5 6 7
Meridional paroxysms attacking on the different days of the Lunar period, and Subsiding on the commencement of the 1 st Interlunar Interval, form different Groups, or Successions of paroxysms, in the manner represented by the dots on the different Horizontal lines in this Division of the Table.							
Meridional paroxysms attacking on the different days of the Interlunar Interval, and Subsiding on the commencement of the 1 st Interlunar Interval form different Groups, or Successions of paroxysms, in the manner represented by the dots on the different Horizontal lines in this Division of the Table.							
Meridional paroxysms attacking on the different days of the Lunar period, and Subsiding on the commencement of the 2 ^d Lunar Interval, form different Groups, or Successions of paroxysms, in the manner represented by the dots on the different Horizontal lines in this Division of the Table.							
Meridional paroxysms attacking on the different days of the Interlunar Interval, and Subsiding on the commencement of the 2 ^d Interlunar Interval, form different Groups, or Successions of paroxysms, in the manner represented by the dots on the different Horizontal lines in this Division of the Table.							
Meridional paroxysms attacking on the different days of the Lunar period, and Subsiding on the commencement of the 3 ^d Interlunar Interval, form different Groups, or Successions of paroxysms, in the manner represented by the dots on the different Horizontal lines in this Division of the Table.							
Meridional paroxysms attacking on the different days of the Interlunar Interval, and Subsiding on the commencement of the 3 ^d Interlunar Interval, form different Groups, or Successions of paroxysms, in the manner represented by the dots on the different Horizontal lines in this Division of the Table.							

Constructed From Balfour.

D. Linnaeus Sculp.

These examples will also suffice to shew how Meridional paroxysms continuing to run on beyond the 3^d into the 4th 5th 6th and 7th Interlunar Intervals, and even farther, form Fevers of a much greater length than the Forms exhibited in this Table.

S E C T. II.

OF THE CAUSE OF THE DIVERSITY OF THEIR
FORMS WITH RESPECT TO LENGTH OR DU-
RATION.

XX.

I. Having shown that the meridional paroxysms are produced by the action of the sol-lunar influence upon the febrile state (XVIII.), and that, whilst the former is constantly changing from one degree of force to another, the latter is liable to an infinite variety of modifications, differing from each other with respect to their tendency to attack and terminate (X.), we infer from these premises the following universal proposition respecting the various duration of these fevers.

T H E O R E M

T H E O R E M I.

*The fluctuating force of the sol-lunar influence coinciding and co-operating, in all its various degrees, with all the various modifications of the febrile state, excites meridional paroxysms attacking in all the different days of the lunar periods and interlunar intervals, and supporting these in different cases for a shorter or longer space, at length allows them to subside and terminate * at the commencement of the interlunar intervals ; sometimes of the 1st, sometimes of the 2^d, sometimes of the 3^d, sometimes of the 4th, sometimes of the 5th, sometimes of the 6th, and sometimes of the 7th ; and thus forms groups or successions of meridional paroxysms constituting fevers, differing from one another in their length or duration, in the manner represented in the Synoptical Table, Plate I.*

S E C T.

* The manner in which they are allowed to *subside* and *terminate* will be more particularly explained afterwards (Theorem IV.).

S E C T. III.

OF THE DISPARITY OF THEIR FORMS WITH RESPECT TO THE FREQUENCY OF THEIR OCCURRENCE.

XXI.

I. Concerning the various forms of fevers exhibited in the Synoptical Table, it is remarkable that some of them occur much more frequently than others; and, when considered comparatively in this view, they naturally divide themselves into those which attack in the lunar periods, and those which attack in the interlunar intervals.

G A R T I C L E

ARTICLE I.

OF THE SUPERIOR FREQUENCY OF THE CLASSES IN GENERAL WHICH ATTACK IN THE LUNAR PERIODS, COMPARED WITH THOSE WHICH ATTACK IN THE INTERLUNAR INTERVALS.

XXII.

1. With respect to the classes which attack in the lunar periods, they are, taken together, far more frequent than those which attack in the interlunar intervals.

§ I.

OF THE SUPERIOR FREQUENCY OF PARTICULAR CLASSES WHICH ATTACK IN THE LUNAR PERIODS, COMPARED WITH THE OTHER CLASSES OF THIS DIVISION.

XXIII.

1. The division of fevers attacking in the lunar periods comprehends under it the following subdivisions or classes, which likewise differ from each other in point of frequency.

The

The 1st class comprehends fevers of about 1, 2, and 3 days ; which are rare and uncommon, compared with those of the 2d and 3d class.

The 2d class comprehends fevers of about 4, 5, 6, and 7 days ; which are much more frequent and common than those of the 1st and 4th classes.

The 3d class comprehends fevers of about 15, 16, 17, 18, 19, 20, and 21 days ; which are more frequent and common than those of any other class.

The 4th class comprehends fevers of about 29, 30, 31, 32, 33, 34, and 35 days, and all others of a greater length, formed by terminating in the 4th, 5th, 6th, and 7th interlunar intervals ; all which are very rare and uncommon.

2. The application and use of the inferences to be drawn from ascertaining the relative frequency of these different classes will appear presently (XXVIII.).

A R T.

A R T. II.

OF THE INFERIOR FREQUENCY OF THE CLASSES IN GENERAL WHICH ATTACK IN THE INTERLUNAR INTERVALS, COMPARED WITH THOSE WHICH ATTACK IN THE LUNAR PERIODS.

XXIV.

1. With respect to the classes which attack in the interlunar intervals, they are, taken together, far less frequent than those which attack in the lunar periods.

§ I.

OF THE SUPERIOR FREQUENCY OF PARTICULAR CLASSES WHICH ATTACK IN THE INTERLUNAR INTERVALS, COMPARED WITH OTHER CLASSES OF THIS DIVISION.

XXV.

1. The division of fevers attacking in the interlunar intervals comprehends under it the following subdivisions or classes, which differ likewise from each other in point of frequency.

The

The 1st class comprehends fevers of about 8, 9, 10, 11, 12, 13, and 14 days; and are the most frequent of this division.

The 2d class comprehends fevers of about 22, 23, 24, 25, 26, 27, and 28 days; and are rather less frequent, I think, than the 1st.

The 3d class comprehends fevers of about 36, 37, 38, 39, 40, 41, 42 days, and all others of a greater length formed by terminating in the 4th, 5th, 6th, and 7th interlunar intervals; and are least frequent.

2. The application and use of the inferences to be drawn from ascertaining the relative frequency of these different classes will appear presently (XXXI).

A R T. III.

AN ATTEMPT TO FIX WITH ACCURACY THE COMPARATIVE FREQUENCY OF THE DIFFERENT CLASSES UNDER THESE TWO DIVISIONS (XXII. & XXIV).

XXVI.

1. Not having ascertained, by any accurate record, the exact proportion which the number of happenings
under

under these two divisions and their subordinate classes bear to each other, I can at present only endeavour to supply this defect, by delivering the general idea that I have formed upon this subject, from what I have seen myself in the course of my practice; and what I am confident approaches nearly to the truth with respect to the superior frequency of the classes I have pointed out.

2. In the following Table, 100 is assumed to represent the whole amount of the happenings under both divisions (XXII. and XXIV.); and the supposed number of happenings under each class or subdivision being placed opposite to it, we behold, at one view, not only the proportions which the happenings of each class bear to each other, but that which they bear, either separately or collectively, to the whole.

THE

THE FIRST DIVISION, viz. Those attacking in the lunar periods comprehends the following classes or subdivisions.

The 1st Class, comprehending fevers of 1, 2, and 3 days, the happenings under which are supposed to be as - -	4
---	---

The 2d Class, comprehending fevers of about, 4, 5, 6, and 7 days, the happenings under which are supposed to be as -	35
--	----

The 3d Class, comprehending fevers of about 15, 16, 17, 18, 19, 20, and 21 days, the happenings under which are supposed to be as - - - - - -	45
--	----

The 4th Class, comprehending fevers of about 29, 30, 31, 32, 33, 34, and 35 days, with others of a greater length, formed by terminating in the 4th, 5th, 6th, and 7th interlunar intervals, the happenings of which are supposed to be as - -	6
	— 90

THE SECOND DIVISION, viz. those attacking in the interlunar intervals, comprehends the following classes or subdivisions.

Carried over

The 1st class, comprehending fevers of about 8, 9, 10, 11, 12, 13, and 14 days, the happenings under which are supposed to be as - - - - -

7

The 2d class, comprehending fevers of about 22, 23, 24, 25, 26, 27, and 28 days, the happenings under which are supposed to be as - - - - -

2

The 3d class, comprehending fevers of about 36, 37, 38, 39, 40, 41, and 42 days, and others of a greater length, formed by terminating in the 4th, 5th, 6th, and 7th interlunar intervals, the happenings of which are supposed to be as - -

1

10

100

1. The advantage to be derived from ascertaining, with arithmetical precision, the comparative frequency of the different classes under these two divisions, will appear from the purpose to which we have applied them, in endeavouring to find out the causes that have occasioned the forms of 4, 7, 11, 14, 17, and 20 days, to be considered as more common than any other; and as the principal and proper forms of these fevers (Vid. XXXIII.).

2. By assuming the relative frequency of those different classes, as if it were already precisely ascertained in numbers, we gain ultimately another advantage, which is this, that, although we may be considerably remote from the truth at present, yet we shall certainly, by this step, approximate to it by degrees, and obtain an exact knowledge of it at last. For, if the frequency of any class is assumed either too high or too low, such errors will soon be corrected by more accurate and extensive observation, and every consequent error that may have proceeded from these, will be rectified also. But, were we to express the relative frequency of these classes by no specific number, and were to content ourselves

selves with the general and unlimited terms of language, such as frequent, less frequent, more frequent, &c. without a reference to any defined and established standard in numbers, we could never expect to gain the advantage I have pointed out; and could never obtain more than a vague and general idea of the truth, totally unfit for the purposes of philosophy.

A R T. IV.

OF THE SUPERIOR FREQUENCY OF CERTAIN INDIVIDUAL FORMS, NAMELY THOSE OF 4, 7, 11, 14, 17, AND 20 DAYS, BELONGING TO THESE DIFFERENT CLASSES, COMPARED WITH THE OTHER INDIVIDUALS OF THESE CLASSES.

XXVII.

1. It is further of importance to observe, that, since the days of Hippocrates, certain individual forms, under these different subdivisions, or classes, (XXIII. and XXV.), have been considered as far more common than any other; and, as it were, the principal and proper forms of these fevers. These individual forms are
fevers

fevers of 4, 7, 11, 14, 17, and 20 days ; and I shall have occasion to observe hereafter (XXXIII.), that there is some reason to suppose that the preference given to these forms may have originated from experience, and have its foundation in nature.

XXVIII.

1. These facts being premised, respecting the comparative frequency of the different divisions, classes, and individuals of the forms of putrid intestinal remitting fevers, we thence derive *a more intimate acquaintance with the nature of the febrile state*; and are thus enabled to deliver *a more specific and satisfactory account of the cause of that diversity which appears in the length and duration of the different forms of these fevers, than we were able to give before in Theorem I.*

2. For making this attempt, it is necessary to attend to the following circumstances, which will be perfectly under-

understood by a single glance thrown upon the Table of Forms, (Plate I.)

1st, That the first class, or fevers of about 1, 2, and 3 days, which are rare and uncommon (XXIII.) are formed by attacking on the 7th, 6th, and 5th days of the lunar periods, and by terminating on the commencement of the first interlunar interval.

2^d, That the second class or fevers of about 4, 5, 6, and 7 days, which are frequent and common (XXIII), are formed by attacking on the 4th, 3d, 2d, and 1st day of the lunar period; and terminating on the commencement of the first interlunar interval.

3^d, That the third class, or fevers of 15, 16, 17, 18, 19, 20, and 21, which are more frequent than any (XXIII.) are formed by attacking on the 7th, 6th, 5th, 4th, 3d, 2d, and 1st days of the lunar period, and by terminating on the commencement of the second lunar interval.

4th, That the fourth class or fevers of about 29, 30, 31, 32, 33, 34, and 35 days, and upwards, which are also rare and uncommon (XXIII.), are formed by attacking on the 7th, 6th, 5th, 4th, 3d, 2d, and 1st days
of

of the lunar period, and terminating on the commencement of the third, fourth, fifth, sixth, and seventh interlunar intervals.

3. In contemplating these facts, whilst we perceive on the one hand that fevers which attack on the 7th, 6th, and 5th days of the lunar period, and which therefore produce, prior to the commencement of the first interlunar interval, fevers of 1, 2, and 3 days only, are exceedingly rare and uncommon; and on the other hand, that the fevers which attack on the 4th, 3d, 2d, and 1st days of the lunar period, and consequently produce, prior to the commencement of the first interlunar interval, fevers of 4, 5, 6, and 7 days, are frequent and common; and still farther, that fevers which attack in all the different days of the lunar period, and run on to the commencement of the second interlunar interval producing fevers of about 15, 16, 17, 18, 19, 20, and 21 days are more frequent and common than any; we are naturally led to infer from these circumstances, that the abatement or remission of the sol-lunar influence on the commencement of the interlunar interval, is able to produce a termination or final crisis in
most

most cases of fever that have continued for the space of 15, 16, 17, 18, 19, 20, and 21 days ; that it is also frequently able to effect this in cases where the fever has continued for 4, 5, 6, and 7 days ; but seldom, and almost never able in cases where it has continued no longer than 1, 2, or 3 days. Conceiving, however, that the abatement or remission of the sol-lunar influence, at the commencement of the interlunar intervals is uniform on all such occasions, and very nearly the same, and incapable of producing such remarkable variations as these, we therefore conclude that the final interlunar crises of these fevers do not depend, solely, upon the abatement or remission of the sol-lunar influence, at the commencement of the interlunar intervals ; but that some other auxiliary principle is required to coincide and co-operate with it at these junctures, in producing these effects.

4. The auxiliary principle required to coincide and co-operate with the remission of the sol-lunar influence at the commencement of the interlunar intervals, in effecting the final interlunar crises, we conceive to be some particular salutary disposition produced in the
state

state of the body during the course of the disease ; and assuming this as an established principle, we shall call it in future, *The Critical Maturity of the Febrile state* ; the nature of which we shall endeavour to explain more fully presently. (8.)

5. From these discussions we obtain the following general proposition with respect to the existence, and the action of that particular property in the febrile state, denominated its Critical Maturity.

THEOREM II.

That the final interlunar crises of these fevers do not depend solely upon the abatement or remission of the sol-lunar influence at the commencement of the interlunar intervals ; but that an auxiliary property of the febrile state, denominated its Critical Maturity, is required to coincide and co-operate with it in producing these effects.

6. Estimating the power of the critical maturity by the effects which it seems to produce in the different instances that have been stated (3), we are led to the following conclusions which we think may be assumed for the present, as the II^d. Axiom or Law which we promised to establish (X. 1.) respecting the force and action of the febrile state in determining meridional paroxysms *to subside and come to an end.*

A X I O M II.

The critical maturity of the febrile state very seldom arrives at that degree which is necessary for producing the final interlunar crisis in less than 4 days ; and, on the other hand, seldom requires more than 21 days.

7. Combining the proposition we have thus obtained (5.) with respect to the force and action of the critical maturity of the febrile state, with that which we formerly advanced in general terms (XX. and Theor. I.), respecting the operation of the febrile state, and fluctuating

tuating force of the sol-lunar influence, in producing the different forms of putrid intestinal remitting fevers, we constitute another proposition upon this subject, more specific and satisfactory than the former.

T H E O R E M III.

The fluctuating force of the sol-lunar influence coinciding and co-operating in all its various stages and degrees, with the various modifications of the febrile state, excites meridional paroxysms to attack in all the different days of the lunar periods and interlunar intervals, and supports them until the commencement of different interlunar intervals ; at which junctures the critical maturity of the febrile state happening to concur with the periodical decline of the sol lunar influence, these meridional paroxysms then subside and come to a final interlunar crisis ; and thus form different groups, or successions of paroxysms, constituting fevers of various length or duration (Vid. Table Plate II.).

by the Coincidence and Cooperation of the Fluctuating force of the Sol-lunar-Influence, with the various modifications of the Febrile State, during the Lunar Periods, and Interlunar Intervals.

D. L. JAMES & S. CUP

Intermittent Interval, produces Fevers of a much greater length than the Forms exhibited in this Table.

8. From the different remarkable changes which take place in the symptoms at the final interlunar crises; viz. a sediment, or a particular turbid appearance in the urine; a more free and natural perspiration; spontaneous stools; a cleaner, moister, and softer tongue, with a more free and natural discharge of saliva; a more loose and copious expectoration; a free discharge of bile, which seemed to disappear, and to be suppressed in the course of the fever, &c. &c.; we conceive that two important events take place upon this occasion, viz. *a solution of the spasm; and a discharge of the morbid matter.* And upon these grounds we advance the following proposition respecting the nature of *the particular circumstances* which constitute the critical maturity, and *the mode* in which they operate in bringing the different forms of putrid intestinal remitting fevers to subside and terminate.

THEOREM

T H E O R E M IV.

That, at the time of the final interlunar crisis, the spasm excited by the putrid particles introduced into the blood, first of all begins to give way ; and, secondly, that the secreting vessels becoming more relaxed and open, and the secretions more free and copious, the corrupted particles will also be discharged in greater quantity : And, from the concurrence of these two events, in various degrees, we are led to infer that the fever is thus brought, sometimes suddenly and at once, and sometimes slowly and gradually, to a final and happy termination.

9. It will not escape the notice of those who are well acquainted with medical subjects, that, by introducing the *sol-lunar influence* as a new principle in pathology, we are now able to reconcile, and unite the two remarkable theories of *morbific matter* and *spasm* ; which have been espoused with so much zeal by their respective votaries ;

taries; and have made so great a noise in the history of medicine. This accommodation was first suggested about five years ago, in our Treatise on THE INFLUENCE OF THE MOON IN FEVERS, published in Bengal, (Vid. Preface, and the Treatise itself, Prop. IV.); and we hope that it will now be better understood.

S E C T. IV.

OF THE CAUSE OF THE DISPARITY OF THEIR
FORMS WITH RESPECT TO THE FREQUENCY
OF THEIR OCCURRENCE.

A R T. I.

OF THE CAUSE OF THE SUPERIOR FREQUENCY OF THE
CLASSES IN GENERAL WHICH ATTACK IN THE LUNAR
PERIODS, COMPARED WITH THOSE WHICH ATTACK IN
THE INTERLUNAR INTERVALS.

XXIX.

1. It being established that these disorders are produced by infection, and consequently that they are propagated and spread, *caeteris paribus*, in proportion to the number of those that are infected; and having also shown, (XVIII. Ax. III.), that the force of the solar influence to excite meridional paroxysms is much stronger during the lunar periods than the interlunar intervals, and that the number of fevers which attack in the former are to the number of fevers which attack in the latter nearly in the proportion of 90 to 10; from these circumstances, we think it reasonable to infer the following proportion, respecting the cause.

THEOREM

THEOREM V.

The superior force of the sol-lunar influence at the lunar periods, first by exciting the attacks of fevers during these periods, in such as are already infected, then by propagating and spreading the infection from those to others, and again by exciting these to attack, and so forth. MORE powerfully and frequently than in the interlunar intervals, operate in a circle ; and thus becomes the cause of the superior frequency of fevers attacking in the lunar periods.

§ I.

OF THE CAUSE OF THE SUPERIOR FREQUENCY OF PARTICULAR CLASSES WHICH ATTACK IN THE LUNAR PERIODS, COMPARED WITH THE OTHER CLASSES OF THIS DIVISION.

XXX.

1. From the preceding Axiom (XXVIII.) respecting the force and action of the critical maturity of the febrile state, we obtain an easy explanation of the causes which produce the superior frequency of particular classes of fevers attacking in the lunar period, naturally arising from it in the form of so many corollaries; and consequently a solution of the question which is the immediate subject of this inquiry.

COROLLARY I.

That, in the first class comprehending fevers attacking on the 7th, 6th, and 5th day of the lunar period, and consequently continuing only 1, 2, and 3 days before the commencement of the first interlunar interval, the necessary degree of critical maturity is seldom compleated at this juncture; and does not concur to produce a final interlunar crisis in more than 4 cases out of 90 which attack in the lunar period.

COR-

COROLLARY II.

That, in the second class, comprehending fevers attacking on the 4th, 3d, 2d, and 1st days of the lunar period, and consequently continuing 4, 5, 6, and 7 days before the commencement of the first interlunar interval, the necessary degree of critical maturity is often compleated at this juncture ; and concurs to produce final interlunar crises in 35 out of 90 cases attacking in the lunar periods.

COROLLARY III.

That, in the third class, comprehending fevers attacking on all the different days of the lunar period, and passing over the first interlunar interval, without a final crisis, and consequently continuing 15, 16, 17, 18, 19, 20, and 21 days before the commencement of the second interlunar

K interval,

interval, the necessary degree of critical maturity is still more frequently compleated at this juncture ; and concurs to produce final interlunar crises in 45 cases out of 90 attacking in the lunar period.

COROLLARY IV.

That, in the fourth class, comprehending fevers attacking in all the different days of the lunar period, and passing over the intermediate interlunar intervals without a final crisis, unto the the commencement of the third, fourth, fifth, sixth, and seventh interlunar interval ; and consequently continuing 29, 30, 31, 32, 33, 34, 35 days, and so on upwards, the necessary degree of critical maturity is not compleated, as usual, at the commencement of the first and second interlunar intervals ; but requires a longer time. Examples, however, of this kind occur in about 6 cases only out of 90.

A R T.

A R T. II.

OF THE CAUSE OF THE INFERIOR FREQUENCY OF THE CLASSES IN GENERAL, WHICH ATTACK IN THE INTER-LUNAR INTERVALS, COMPARED WITH THOSE WHICH ATTACK IN THE LUNAR PERIODS.

XXXI.

1. It being established that these disorders are produced by infection, and consequently that they will be propagated and spread, *cæteris paribus*, in proportion to the number of those that are infected; and having also shewn (XVIII. Ax. II.) that the force of the sol-lunar influence to excite meridional paroxysms, is much weaker during the interlunar intervals, than the lunar periods, and that the number of fevers which attack in the former, are to the number of fevers which attack in the latter, nearly in the proportion of 10 to 90, we think it reasonable to infer from these premises, the following proposition, respecting the cause.

THEOREM

THEOREM VI.

The inferior force of the sol-lunar influence, at the interlunar intervals, first by exciting the attacks of fevers during these intervals, in such as are already infected, then by propagating and spreading the infection from these to others, and again by exciting these to attack, and so forth, LESS powerfully and frequently than in the lunar periods, operates in a circle, and thus becomes the cause of the inferior frequency of fevers attacking in the interlunar intervals.

§ I.

OF THE CAUSES OF THE SUPERIOR FREQUENCY OF PARTICULAR CLASSES WHICH ATTACK IN THE INTERLUNAR INTERVALS, COMPARED WITH THE OTHER CLASSES OF THIS DIVISION.

XXXII.

1. From the preceding axiom, (XXVIII.), respecting the force and action of the critical maturity of the febrile state, we obtain an easy explanation of the causes which produce the superior frequency of particular classes of fevers attacking in the interlunar interval, naturally arising from it in the form of so many corollaries; and consequently a solution of the question which is the immediate subject of this inquiry.

COROLLARY I.

That, in the first class of fevers attacking on the different days of the interlunar interval, and consequently continuing 8, 9, 10, 11, 12, 13, 14, days, before the commencement of the first interlunar interval, the necessary degree of critical maturity is compleated, in a great many cases, at this juncture; and thus concurs to produce a final interlunar crisis in 7 out of 10 fevers attacking on the interlunar intervals.

COROL-

COROLLARY II.

That, in the second class of fevers attacking in the interlunar intervals, and continuing till the commencement of the second interlunar interval, and consequently forming fevers of 22, 23, 24, 25, 26, 27, and 28 days, the necessary degree of critical maturity is generally completed at this juncture, and concurs to produce the final interlunar crisis in many of those cases that do not terminate in the first interlunar interval, or in the proportion of 2 cases out of 10 which attack in the interlunar interval.

COROLLARY III.

That, in some rare and uncommon cases of fevers attacking in the interlunar intervals, the necessary degree of critical maturity not being completed, even at the commencement of the second inter-

interlunar interval, they defer their final interlunar crisis until the 3d, 4th, 5th, 6th, and 7th interlunar interval, &c. ; and that such cases as these form the third class of fevers attacking in the interlunar intervals, and occur only in the proportion of 1 case out of 10.

A R T. III.

OF THE CAUSES WHICH HAVE OCCASIONED CERTAIN INDIVIDUAL FORMS BELONGING TO CERTAIN CLASSES UNDER THESE DIVISIONS, NAMELY THOSE OF 4, 7, 11, 14, 17, AND 20 DAYS, TO BE CONSIDERED AS FAR MORE COMMON THAN ANY OTHER ; AND AS THE PRINCIPAL AND PROPER FORMS OF THESE FEVERS.

XXXIII.

1. Having shewn (XXX. XXXII.) in what manner the action of the critical maturity of the febrile state determines and limits the final interlunar crisis, or the solution of fevers attacking in the lunar periods and interlunar intervals to certain fixed points of time more
fre-

frequently than others, and thus forms them into classes distinguished from each other in respect of their frequency, we now proceed to inquire why certain individual forms under these classes have been considered [as more frequent and common than any other ; and as the principal and proper forms of these fevers.

2. In attending to all the various forms of fevers constituted by the varieties we have pointed out in their length or duration, the mind will naturally be strongly impressed by those only which present themselves *frequently* ; and those which occur *rarely* will leave but little or no impression at all.

To

To the HEAD of those which occur *rarely* we refer,

Belonging to those attacking in the lunar period,

The 1st class or fevers of 1, 2, and 3 days,

which are to 100, the whole amount of

the happenings, in the proportion of - 4

The 4th class, comprehending fevers of about

29, 30, 31, 32, 33, 34, 35 days and up-

wards, which are to 100, the amount of

happenings, in the proportion of - 6

Belonging to those attacking in the interlunar

intervals,

The first class, or fevers of 8, 9, 10, 11, 12,

13, and 14 days, which are to 100, the a-

mount of happenings, in the proportion of 7

The 2d class, or fevers of 22, 23, 24, 25, 26,

27, and 28 days, which are to 100, the a-

mount of happenings, in the proportion of 2

The 3d class, comprehending fevers of about

37, 38, 39, 40, 41, and 42 days and up-

wards, which are to 100, the amount of

happenings, in the the proportion of 1

The whole amount of forms occurring *rarely* 20

To the HEADS of those occurring *frequently* we refer,

Belonging to those attacking in the lunar periods,

The 2d class, or fevers of 4, 5, 6, and 7
days, which are to 100, the amount of
the happenings, in the proportion of 35

The 3d class, or fevers of 15, 16, 17, 18,
19, 20, and 21 days, which are to 100, the
amount of happenings, in the proportion of 45

The whole amount of forms occurring *frequently* 80

From these premises, it is obvious that the forms under the head of those which occur *rarely*, presenting themselves only in the proportion of 20 to 100, will make an impression that will be slight and transitory, and that the forms under the head of those which occur *frequently*, presenting themselves in 80 cases out of 100, will make an impression that will be strong and lasting; and consequently that the forms of 4, 5, 6, 7—15, 16, 17, 18, 19, 20, and 21 days, will generally be considered as the prevailing and principal forms of these fevers.

3. Now,

3. Now, if, from any accidental cause, the mind should happen to form a predilection in favour of the number 4, and should conceive that this number of days constitutes the natural and proper form of a simple fever; and that all fevers of a greater length are nothing more than so many superadditions of the simple form; upon this foundation, a prepossession being established in favour of the numbers 4, 7, 11, 14, 17, and 20, which are the forms created by the number 4, and six successive appositions of the same number made in a particular way * to itself; the forms of 11 and 14, which are common in the list of those that occur *rarely*, will naturally be transferred, by the imagination, from that list, and inserted amongst the list of those that occur *frequently*, in order to supply the links or steps which are naturally deficient among the latter between 7 and 17. This being done, all the *intermediate forms*, (viz. those of 5, 6—8, 9, 10—12, 13—15, 16—18, 19—21 days) being readily converted, upon one pretence or other, into those *favourite forms*, (viz. forms of 4, 7, 11, 14, 17,

* Hippocrates Praenotiones, Sect. XX. and our remarks upon it in the note, page 86.

17, and 20 days), to which they are most contiguous, and approximate most nearly, will thus be disregarded and forgotten; and thus the forms of 4, 7, 11, 14, 17, 20 days, will remain impressed almost alone, and be considered as the principal and proper forms of these fevers.

To confirm the probability of this explication, it is to be observed farther, that the first symptoms of the attacks of fevers, as well as their final crises or terminations, are in many cases rather obscure*; and that this obscurity is in a singular manner favourable to that deception which the mind, when prepossessed, may incline to impose upon itself, in adopting the favourite forms we have specified, in preference to those which are intermediate. Owing to this obscurity of the symptoms, the day of the attack, and of the final crisis, may either of them, or both of them, be included or excluded from any form at pleasure; and this, to an imagination under the influence of a prejudice in favour of the favourite forms, is a latitude more than sufficient to establish the delusion we have described:

For

* That is to say, to those who are unacquainted with the proper periods for watching and observing them.

For the intermediate forms between each succeeding favourite form, amounting to no more than two, excepting in one case *, may all of them be converted, at pleasure, into the intermediate forms which they immediately precede or follow, by the admission or exclusion of a single day, in the following manner :

The intermediate form of 5 days is readily converted into the favourite form of - - 4 days.

The intermediate forms of 6 and 8 days are readily converted into the favourite form of 7 days.

The intermediate forms of 9, 10, and 12 days are readily converted into the favourite form of 11 days.

The intermediate forms of 13 and 15 days are readily converted into the favourite form of 14 days.

The intermediate forms of 16 and 18 days are readily converted into the favourite form of 17 days.

The intermediate forms of 19 and 21 days are readily converted into the favourite form of 20 days.

4. The following quotation from Hippocrates, † tends to confirm what I have advanced upon this subject,

* The third case, (Vide page 86.).

† Vide Praenotiones, Sect. XX. et Judicationibus, Sect. II.

ject, I mean a predilection of the number 4, in a striking manner, and will enable me to bring the present inquiry to a speedy conclusion.

‘ Febres judicantur in iisdem numero diebus ex quibus et superstites evadunt homines, et ex quibus pereunt. Etenim placidissimae febres et signis securissimis nitentes, quarto die desinunt aut prius. Malignissimae vero, et signis horrendissimis, quarto die aut prius occidunt. Primus igitur ipsarum insultus sic definit. Secundus autem ad septimum producitur. Tertius ad undecimum*. Quartus ad decimum quartum. Quintus ad decimum septimum. Sextus ad vigesimum. Hi igitur impetus exacutissimis morbis, per *quatuor* ad viginti additione desinunt. Non potest autem quicquam harum integris diebus exacte numerari,

* It is exceedingly remarkable, that in this (the 3d) apposition or attack, *three* entire days, viz. the 8th, 9th, and 10th, are included between the first and last day ; whereas in all the other attacks or appositions, only *two* entire days are included between their first and last days. This is a circumstance, which tends to shew how much the theory of *quaternal appositions* is constrained and forced ; and insufficient for the purpose to which it is applied.

‘ rari, neque enim annus et menses integris diebus nu-
 ‘ merari possunt. Postea vero eodem modo juxta ean-
 ‘ dem additionem, primus circuitus quatuor et triginta
 ‘ dierum est; secundus quadraginta dierum; Tertius
 ‘ sexaginta dierum. At in horum principiis difficilli-
 ‘ mum est cognoscere eos qui in plurimo tempore judi-
 ‘ cabuntur. Simillima enim sunt ipsorum principia.
 ‘ Verum a primo die animadversionem facere oportet,
 ‘ et prout *Singuli Quaternarii* adduntur considerare, et
 ‘ non latebit te quo vertitur morbus.’ &c.

‘ The event of fevers, whether favourable or fatal, is
 ‘ determined in the same number of days: for Fevers
 ‘ with the most moderate and pleasing appearances
 ‘ terminate on the fourth day, or sooner; whilst fevers
 ‘ with symptoms the most malignant and alarming, ter-
 ‘ minate likewise on the fourth day, or before it.
 ‘ These, therefore, are the limits of their first attack.
 ‘ But the second attack is protracted to the seventh
 ‘ day; the third to the eleventh; the fourth to the
 ‘ fourteenth; the fifth to the seventeenth; and the sixth
 ‘ to the twentieth. These attacks, therefore, in acute
 ‘ diseases, extend to twenty days by the addition of
 ‘ four,

‘ four, and then terminate. None of these, however,
 ‘ can be measured exactly by entire days ; neither can
 ‘ the year itself, nor even months. The next circuit,
 ‘ or form, after these (viz. of twenty days) consists of
 ‘ thirty-four days, constituted in the same manner, by
 ‘ the same addition ; the second consists of forty days ;
 ‘ the third of sixty.—But at the beginning of these
 ‘ different forms, it is extremely difficult to distinguish
 ‘ those that are to continue long ; for the symptoms of
 ‘ all of these at their commencement, are much alike. It
 ‘ is, therefore, necessary to watch them from the first
 ‘ day, and to observe in what manner the *Quaternal Ap-*
 ‘ *positions* are made ; and you may then discover the
 ‘ tendency of the disease.’

From this authority we know that the predilection in
 favour of the number 4, and its different appositions to itself,
 has actually existed since the days of Hippocrates. We
 thence infer that the deception, which we have just now
 described, as its natural consequence, has actually taken place,
 ‘ and contributed to confirm the general opinion respecting
 the superior frequency of the favourite forms ; and finally,
 ‘ that

that it is reasonable to advance the following proposition upon this subject.

THEOREM VII.

*That the forms of 4, 5, 6, 7, 11, 14, 15, 16, 17, 18, 19, 20, and 21 days are really the more common forms of these fevers ; * and that there is reason to believe that the ancient prejudice in favour of the number 4, and its different appositions to itself, has contributed to produce and support the opinion, that from amongst these, the forms of 4, 7, 11, 14, 17, and 20 days, are their most common and principal forms.*

XXXIV.

1. Prosecuting our inquiries still farther, into the causes which have occasioned the individual forms of 4, 7, 11, 14, and 20 days, to be considered the most common and principal forms of these fevers ; it is now

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* It must be remembered that we have said, in page 83, that the forms 11 and 14 are *common* in the list of those which occur *rarely*.

to be observed, that we have hitherto supposed that the power of all the different days of the lunar periods and interlunar intervals to excite the attacks of fevers is perfectly equal; and consequently that an equal number of fevers being excited in all of them, the frequency of any one form will not exceed the frequency of any other in its respective class.

For example, in the second class of the first division of fevers, consisting of fevers of 7, 6, 5, and 4 days, which are formed by attacking on the 1st, 2d, 3d, and 4th days of the lunar period, and terminating on the commencement of the first interlunar interval, and which happen in the proportion of 35 times out of 100, (to avoid fractions say 36 times,) the number of attacks, on each of these days, supposing their power of exciting fever to be perfectly equal, will be exactly 9; consequently there will be formed, in this manner, 9 fevers of 7 days, 9 of 6 days, 9 of 5 days, and 9 of 4 days, in all 36. And thus it is evident, that the frequency of any one form will not exceed the frequency of any other in its respective class: if the power of all

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the different days of the lunar period and interlunar interval to excite fevers be perfectly equal.

On the other hand, should the power of exciting fever be unequal, and greater, for example, on the 1st and 4th day of the lunar period, than it is on 2d and 3d; and should the number of attacks on each of the two former days, amount to 12, and only to 6 on each of the two latter, there would then be formed under the 2d class of the first division of fevers, 12 fevers of 7 days, 6 of 6 days, 6 of 5 days, and 12 of 4 days; in all 36. And thus it is evident, that the frequency of some forms would exceed the frequency of certain others in their respective classes; should the power of the different days of the lunar period and interlunar interval to excite fevers be unequal.

2. Now, if the forms of 4, 7, 11, 14, 17, and 20 days do absolutely occur more frequently than any other in their respective classes, it follows from the foregoing illustration, that this disparity must proceed from a power in particular days, to excite the attacks of fevers more frequently on these days, than on any other; and it will appear by referring to the Table,

Plate

Plate I. and II. that these particular days can be no other than the 5th of the interlunar interval, the 1st, 4th, and 7th of the lunar period, and likewise the 3d of the interlunar interval; or these days nearly. We must, therefore, now proceed to inquire if these days be actually possessed of such a power. Unfortunately, however, this question having but lately become an object of our attention, proper observations have not been made for ascertaining the fact; and we are thus reduced to the necessity of inquiring how far it may be inferred, from any knowledge we have obtained of *the nature of the incipient febrile state, and of the sol-lunar influence.*

3. With respect to the *nature of the febrile state*, when it may be called *incipient*, and before it has appeared in the shape of a meridional paroxysm, we have made no direct observations that throw any light upon this subject. But, as the tendency of meridional paroxysms when once begun, to repeat their attacks after an interval of about *one or two* days, constituting what has been called *the tertian and quartan tendency* in fevers, is common and well established, we are thence induced

to suppose that a tertian and quartan tendency may likewise prevail occasionally, in the incipient and latent febrile state of these fevers, before it is able to shew itself in the form of distinct and obvious meridional paroxysms.

4. On the other hand, with respect to the nature of the sol-lunar influence, we must also confess that no direct observations entitle us to infer, that there exists in the five particular days we have specified a superior power of exciting meridional paroxysms. All that we have been able to discover or infer, is a *rising* and *falling* in its force and action, nearly coincident and similar to that of the flowing and ebbing of the tides : The *former* appearing towards the end of the interlunar interval, and continuing until the expiration of the lunar period; the latter appearing upon the expiration of the lunar period, and continuing until towards the end of the interlunar interval.

5. Contemplating and combining the ideas we have thus obtained of the incipient febrile state, and sol-lunar influence, we do not think it unreasonable to infer the following proposition respecting the power of their united force and action.

THEOREM

THEOREM VIII.

That it is possible that a tertian or quartan tendency in the incipient febrile state, concurring occasionally with the ascending and descending degrees of the sol-lunar influence, about the 5th of the interlunar interval, the 1st, 4th, and 7th of the lunar period, and also the 3d of the interlunar interval, may actually determine meridional paroxysms to shew themselves more frequently about these junctures ; and that thus, the forms of 4, 7, 11, 14, 17, and 20 days, or these forms nearly, may actually occur more frequently in the course of nature.

6. We also think it probable, that, not only the tertian and quartan, and all the other varieties of this kind, observed in the progression of remitting and intermitting fevers, may hereafter be found to depend on the concurrence of the various modifications and

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tendencies of different febrile states, with the different stages and degrees of the sol-lunar influence.

7. These are discussions of importance; and I have entered into them here, not merely for the purpose of proposing my conjectures, but to shew that we are still in the dark with respect to many material questions which merit the attention of those who are desirous of being intimately acquainted with the nature of fevers.

XXXV.

1. Having discovered, in the course of this tedious analysis, (XXXIII. XXXIV.), that there is reason to believe that *causes*, both *imaginary* and *real*, may have concurred to produce and confirm the general notion that has been entertained respecting the superior frequency of the forms of 4, 7, 11, 14, 17, and 20 days, we now think ourselves warranted to establish the following comprehensive proposition, in reply to the question which is the immediate object of our present investigation under this article.

THEOREM

T H E O R E M IX.

That there is great reason to believe that the forms of 4, 5, 6, 7—11, 14—15, 16, 17, 18, 19, 20, and 21 days, taken together, are really the more common forms of these fevers (XXXIII. 2.) ; That the preference given to the favourite forms 4, 7—11, 14—17, 20 days, is possibly founded, in some degree, on their more frequent occurrence in the course of nature, occasioned by the superior influence of the five principal exciting junctures (Theor. VIII.) ; That, independent of this, the different numbers of which these favourite forms consist, coinciding with a prejudice in favour of the number 4, and the numbers formed by repeated appositions of this number made in a peculiar manner to itself, the idea of their real frequency has been greatly magnified by the imagination (XXXIII. 3.) ; and, finally, That, from these causes, they have

come

come to be considered, not merely as the most frequent and principal, but almost as the only forms of fevers, into which all the intermediate and less common forms have been converted and assimilated, by the bias of prepossession, and almost obliterated in the history of medicine.

A R T. IV.

THE CONCLUSION DRAWN FROM THE WHOLE OF THESE
PREMISES RESPECTING THE NATURE OF THE FORMS
AND CRISES OF THESE FEVERS.

XXXVI.

1. Presuming, from the established uniformity and steadiness of Nature, that her laws and operations have ever been the same that they are now, we infer that the effects and phenomena, which these have produced, have never differed in their nature and forms from those of the present time; and thence we conclude, that *the various histories which have been delivered*

to the world of such fevers, are nothing more than so many different pictures, more or less accurate, of their different natural forms, produced, like those which we have seen and described, by the action of the sol-lunar influence upon the febrile state.—It therefore follows that their nature, origin, course, duration, and termination, and, in short, their forms and crises, have always been similar to the nature, origin, course, duration, and termination, and, in short, to the forms and crises of those which we have seen and described; and consequently, that these having been already explained and accounted for in the course of this analysis, *we have thus unfolded the whole doctrine and mystery of the forms and crises of these fevers:* Which was proposed to be done.

A R T.

A R T. V.

OF OTHER PHENOMENA ; PARTICULARLY OF THE VARIATION IN THE STATE OF THESE FEVERS, AT THE EQUINOCTIAL PERIODS, AND INTER-EQUINOCTIAL INTERVALS.

XXXVII.

1. The changes which take place in the state of these fevers, at different seasons of the year, are the only phenomena that now remain to be explained.

2. But, as the variation which takes place in the verno-equinoctial periods is much less conspicuous, than that which appears in the autumnno-equinoctial period, and is not so precisely ascertained, we shall therefore, at present, attempt to pronounce only with respect to the latter.

3. Upon this subject we have to observe, that, as far as we have been able to discern, putrid intestinal remitting fevers are much more frequent, violent, and obstinate, during the autumnno-equinoctial period than
the

the inter-equinoctial intervals which precede and follow it.

4. In explaining the cause of this inequality, we are naturally led to adopt a mode of reasoning similar to that which was employed in accounting for the superior frequency of fevers attacking in the lunar periods, compared with the frequency of those which attack in the interlunar intervals ; and we apply it in the following manner.

It being established, that these disorders are produced by infection, and consequently that they will be propagated and spread in proportion to the number of those that are infected, and the degree of infection ; and having also shewn (XVIII. Ax. III.), That the force of the sol-lunar influence to excite meridional paroxysms is much stronger during the equinoctial periods than their respective inter-equinoctial intervals ; and, ultimately, that the frequency, violence, and obstinacy of these fevers, are much more remarkable during the autumnal-equinoctial period than the preceding and following inter-equinoctial intervals (4.

think it reasonable to infer, from these premises, the following propositions respecting the cause.

T H E O R E M X.

That the superior force of the sol-lunar influence at the autumnal-equinoctial periods, first, by exciting the attacks of fevers during these periods in such as are already infected, then by propagating and spreading the infection from these to others, and again by exciting these to attack, and so forth, MORE powerfully and frequently than in the inter-equinoctial intervals, operates in a circle, and thus becomes the cause of the superior frequency, violence, and obstinacy of fevers in the autumnal-equinoctial periods.

T H E O R E M

THEOREM XI.

The inferior force of the sol-lunar influence at the inter-equinoctial intervals, first, by exciting the attacks of fevers, during these intervals, in such as are already infected, then by propagating and spreading the infection from these to others, and again by exciting these to attack, and so forth, LESS powerfully and frequently than in the autumnno-equinoctial periods, operates in a circle, and thus becomes the cause of the inferior frequency, violence, and obstinacy of fevers attacking in the interlunar intervals.

5. From

5. From these propositions (Theor. X. and XI.) arise the following corollaries, which enable us to prognosticate, with considerable certainty, respecting the state and course of these fevers, when they occur at these different seasons of the year.

COROLLARY I.

Caeteris paribus, fevers attacking, and having to run their course in the autumnno-equinoctial period will be more severe and obstinate, than those which attack, and have to run their course, in the inter-equinoctial intervals.

COROLLARY II.

Caeteris paribus, fevers passing from the summer inter-equinoctial interval into the autumnno-equinoctial period, will incline to increase and continue.

COROL.

COROLLARY III.

Cæteris paribus, fevers passing from the autumnal-equinoctial period into the winter inter-equinoctial interval, will incline to subside and terminate.

P R O B.

P R O B L E M I I I .

*TO EMPLOY THE KNOWLEDGE WE HAVE
OBTAINED OF THE NATURE OF THE VA-
RIOUS FORMS, &c. OF PUTRID INTESTI-
NAL REMITTING FEVERS, TO DEDUCE
AND INSTITUTE AN IMPROVED METHOD
OF CURING THEM.*

C H A P T E R I .

THE GENERAL RULES DEDUCED AND
PROPOSED.

XXXVIII.

I. **D**IRECTED by the principles of the theory
which has been explained (Prob. I. II.), I
have been led to adopt the following general rules for
conducting the cure of these fevers.

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S E C T.

S E C T. I.

OF THE GENERAL RULES FOR CURING PUTRID
INTESTINAL REMITTING FEVERS WITHOUT
LOCAL AFFECTION.

A R T. I.

IN THEIR MILD AND SAFE FORMS.

XXXIX.

I. In our account of the febrile state, we had occasion to observe, first, that, in putrid intestinal remitting fevers, the mucus which lines the intestines, especially the smaller, is in a putrifying state ; and that this being absorbed and introduced into the blood in circulation, becomes the exciting cause of that remarkable change which constitutes the febrile state ; and, secondly, that the contagious matter which infects and corrupts the mucus, requires a considerable interval to
produce

produce these effects; and may therefore be thrown out of the body by an early exhibition of emetic, purging, and sudorific medicines, before the disease is confirmed.

2. For these different purposes, *Tart. Emetic*, owing to the expedition and certainty with which it operates, when properly managed, is better calculated than any other medicine we know; and upon this foundation we establish our first general rule for curing these fevers.

R U L E I.

That the contagious matter must be evacuated, if possible, before the mucus of the stomach and intestines be infected and corrupted; or before an absorption sufficient to excite and confirm the disease has taken place, by vomiting, purging, and sweating with the forms of Tart. Emetic, that are best suited to these several purposes.

XL.

1. With respect to the febrile state, we observe farther, first, that, when it is once confirmed, it is always, as far as we have been able to discern, in proportion to the presumable quantity and acrimony of the matter absorbed from the intestines ; that is to say, that the violence of the febrile state is constantly increased when the contents of the bowels are long retained, and become highly offensive, and constantly prevented from increasing when they are maturely and effectually evacuated. And we observe, secondly, that, in putrid intestinal remitting fevers, (and I suspect in all others), there is a constant tendency to costiveness, with evident signs of a spasm or constriction of the bowels, which increases with the other febrile symptoms, during the meridional paroxysms, and remits during the intermeridional intervals, especially that which happens in the morning ; and that, during these remissions, the operation of purging, laxative, and sudorific medicines, is certain, expeditious, easy, and effectual ; but quite otherwise

therwise during the continuation of the meridional paroxysms.

2. To these observations, I have here to add, first, that *calomel*, in a degree superior to any other medicine I am acquainted with, possesses the property of loosening and detaching the mucus of the intestines ; that it requires, in general, from 6 to 10 hours to effect this perfectly, and operates best when the patient lies quietly a-bed, without tossing or moving about ; that a proper dose to an adult is from 6 to 12 grains ; and that this dose must be repeated from 3 to 6 times * at the beginning of the disease ; and afterwards, occasionally, as it may seem to be required by the fulness of the bowels, and state of their contents. We have to add, secondly, that, in discharging the mucus, when loosened and detached by the calomel, together with the other faeces, a solution of *Sal Cathartic. Amar* with *Crem. Tart.* and *Manna*, *Sugar*, or *Honey*, and a very small proportion of *Tart. Emetic.* given in divided doses every hour, or every half hour, operates

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* This must be determined by the state of the stools.

more certainly, expeditiously, easily, and effectually, than any other medicine I have used. Three or four small doses must be given every morning after the doses of calomel, at the beginning of the disease, and afterwards in the course of it, as many every morning, or every second morning, as are sufficient to keep the bowels perfectly open and easy.

Upon these premisses, we establish our Second and Third general Rule to be observed in the curing of these fevers.

R U L E

R U L E II.

*That, when the first attempts * to stop the fever at the beginning, by immediate evacuations, by vomitings, &c. with Tart. Emet. have been made ; and when it appears to be established and confirmed, the time of the nocturnal meridional paroxysms must be dedicated, during the four or five first days of the fever, to the task of loosening and detaching the mucus from the coats of the intestines, by repeated doses of calomel taken at bed-time ; and these must likewise be exhibited, for the same purpose, during the course of the disease, whenever they appear to be required by the state † of the bowels.*

R U L E

* These attempts must be made, if possible, in the course of the first day, before night, so as not to prevent the exhibition of the calomel at bed-time.

† That is to say, their fullness, and the offensiveness of the stools.

R U L E III.

That the time of the succeeding morning intermeridional intervals must be employed, during the four or five first days of the fever, in discharging the mucus which has been loosened and detached by the doses of calomel, with whatever other faeces have been collected in the course of the night, by the laxative solution of Sal Cathart. Amar. &c. of which small doses must likewise be continued every morning, or every second morning, in the course of the disease, to prevent the collection and remora of any putrid and offensive matter, and its future absorption.

XLI.

1. Whilst we are taking these steps to prevent the absorption of the putrid matter from the intestines, it is also necessary to remember, that the patient's linen
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and bed-clothes, together with the air which furrounds him, will become impregnated with *contagious effluvia*, no less capable of being admitted into the body, and of exciting and supporting fever, than the original infection ; and from this consideration we are directed to a fourth general rule.

R U L E IV.

That every possible means must be employed to prevent the readmission of contagious effluvia into the body, by renewing and correcting the air in which the patient breathes, &c. and by a proper change of his linen and bed-clothes.

XLII.

1. A mixture of farinaceous substance, with the juice of fresh fruit, seasoned with wine, sugar, and nutmeg, or cinnamon, in the form of *panada*, makes a nourishment that is, in general, more refreshing and acceptable

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to the patient than any other, and well calculated to counteract the putrid tendency of the disease. The most proper time for exhibiting nourishment is in the course of the day, after the operation of the morning laxative, and before the approach of the nocturnal exacerbation.

Upon this we establish a fifth general rule, to be attended to in curing these disorders.

R U L E V.

That the body must be refreshed and nourished, particularly in the course of the day, after the operation of the morning laxative, and before the approach of the nocturnal exacerbation, by small cupfuls of panada given at proper intervals.

XLIII.

1. It was observed before, in its proper place, that the natural tendency of these fevers is to make their attack,

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to increase in their violence, and to continue during the lunar periods, and, on the other hand, to defer their attack, to abate in their violence, and to terminate in the interlunar intervals; that many terminate in the first interlunar interval; but that the more general tendency seems to incline them to run on to the second; that, beyond the second, they continue, in some cases, going on to interlunar intervals still more distant, even to the 7th; and that there is reason to believe that they proceed occasionally to intervals yet more remote.

2. But, although it be the natural tendency of these fevers to increase in their violence during the lunar periods, and although they sometimes continue for an extraordinary length of time, it is to be remembered, that, if the general rules I have recommended for their cure be properly observed, the symptoms very seldom arise to any alarming height; and that they generally terminate successfully in the first and second interlunar intervals.

From

From these reflections, there arises a sixth, and a seventh general rule, to be observed in curing these fevers.

R U L E VI.

That, being assured that the lunar periods will certainly aggravate the meridional paroxysms, we are on no account to procrastinate, at the beginning of the disease, the exhibition of the medicines prescribed for clearing the bowels, from any idle hope that it will vanish of its own accord ; but, on the contrary, are to proceed with all the expedition we can ; and are likewise to be careful to avoid every irregularity that may increase the violence of the fever, and concur with the natural tendency of this period.

R U L E

R U L E VII.

That we are not to be alarmed by a continuation of the fever, or by any moderate aggravation of the symptoms that may take place at the lunar periods ; but to proceed steadily, according to the method we have proposed, without changing our plan, or harrassing our patient with a constant change and trial of unnecessary and painful remedies ; knowing that all will terminate well, and in good time, in one of the interlunar intervals.

XLIV.

1. From the different remarkable changes which take place in the symptoms at the final interlunar crisis, viz. a sediment or a turbid appearance in the urine ; a more free and natural perspiration ; spontaneous stools ; a clearer, moister, and softer tongue, with a
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more free and natural discharge of saliva ; a more loose and copious expectoration ; a free discharge of bile, which seems to disappear, and to be suppressed, in the course of the fever, &c. &c. We conceive, I have already said (XXVIII. 8.), that two important events take place upon this occasion : First, that the spasm excited by the putrid particles introduced into the blood, now begins to give way ; and, secondly, that the excretories becoming, by the solution of the spasm, more open and relaxed, and the secretions more free and copious, the corrupted particles themselves will also be discharged in greater quantity ; and, from the concurrence of these two events, we are led to infer that the fever is brought, sometimes suddenly and at once, and sometimes gradually and slowly, to a final and happy termination.

2. Proceeding upon this theory, I am confident that I have contributed greatly to bring the fever to a complete and speedy crisis, by using means to co-operate with the natural tendency of the interlunar interval to resolve the spasm ; and, by encouraging and increasing the secretions which naturally incline to take place at
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this juncture. To effect these two purposes, on the morning which succeeds the expiration of the lunar period, I take care to keep the patient exceedingly quiet ; and to remove, at the same time, every thing in the bowels that may possibly support irritation and spasm ; and, in the course of the day, after the laxative has operated, I encourage a gentle perspiration, by an antimonial, or by other means that may be judged more proper.

From this discussion, we obtain an eighth general rule,

R U L E VIII.

To co-operate with the natural tendency of the commencement of the interlunar interval to resolve the spasm ; and to encourage the discharge of the morbid particles circulating in the blood, by the natural secretions, and to act upon this plan during the whole of the interlunar intervals.

XLV.

1. If, at the end of the interlunar interval, the pulse, notwithstanding all these endeavours, should continue quicker than its natural standard, the tongue foul, and the sleep disturbed by dreams in the night ; and if, instead of a proper sediment at the bottom of the glass, the urine should exhibit a suspended mucus-like cloud, although the patient should be pretty well in other respects, and should have even recovered some appetite for food, there is great reason to apprehend that the seeds of the fever are still lurking within ; and that it will again appear in its proper colours, in the course of the succeeding lunar period.

These observations suggest a ninth and tenth general rule.

R U L E

R U L E IX.

That, if the symptoms of the febrile state have not perfectly disappeared at the end of the interlunar interval, we are to be on our guard to avoid every irregularity that may concur with the natural tendency of the lunar period to renew the fever. And,

R U L E X.

That, if the fever should revive in the lunar period, it is to be treated upon the principles and rules we have explained ; making proper allowance for the change that has taken place in the patient's strength, &c.

XLVI.

1. These are all the rules which seem to be required for the cure of putrid intestinal remitting fevers, when

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they

they appear in forms that are *really mild* and *safe*. And, as the medicines prescribed by these rules do not suddenly, like the Peruvian bark, interrupt the fever at once, but allow us to observe it proceeding in its natural course and direction, I have often been induced, from this motive, to depend on these alone, in cases which appeared to be sufficiently *mild* and *safe*; and where I did not entertain any apprehension of danger. But, as I have been more than once deceived in cases of this kind, and as the method of giving the *bark* with opium, in the manner recommended for the cure of the *more dangerous forms* of these disorders, gives great security, and can be attended with no inconveniency to be put in opposition to this advantage, I recommend it earnestly to every young practitioner to proceed upon the supposition, that none of these fevers, however mild their appearance, are free of danger; and to treat them, in every case, with the *bark*, at the beginning, according to the rules laid down for curing them when they appear in the forms that are considered as *more violent* and *dangerous* (Vid. XLVII.).

A R T. II.

OF THEIR MORE VIOLENT AND DANGEROUS FORMS.

XLVII.

1. Having delivered the general rules that are to direct us in treating the milder and safer forms of putrid intestinal remitting fevers without local affection, we now proceed to provide rules for the management of those which are more violent and dangerous.

2. In the *milder forms*, when they are treated in the manner we have directed, the heat, anxiety, and debility, continue moderate ; and although the patient's head may be somewhat deranged whilst he is awake, and his slumbers disturbed with disagreeable dreams, he still, however, continues to get rest, and to be in some degree refreshed.

In such cases, we infer, from the moderation of the symptoms, first, that the putrefaction going on in the mucus of the intestines is slow and inconsiderable ; and

that

that there is no danger of the intestines themselves being affected with mortification: Secondly, that the quantity and irritating nature of the corrupted particles which have been absorbed are likewise inconsiderable; and that it is capable of producing mild mercurial paroxysms only, which do not injure the brain by their violence; and are not attended with danger: And, lastly, that the contents of the bowels being carefully evacuated, and prevented from being absorbed, and what is already absorbed constantly carried off by the skin, kidneys, &c. the fever will at last terminate of its own accord, at one of the intervals, without the aid of any other medicines than those which we have prescribed.

3. But it is otherwise in *the more violent and dangerous forms* of these fevers which are the subject of our present consideration; for, in these, the heat, anxiety, and debility, are excessive; and the head being deranged to an alarming degree, and the patient deprived entirely of rest, we are then led to conclude, not only that there is danger of a mortification of the bowels from the degree and extent of the putrefaction going

on in the mucus ; but that the matter already absorbed, by continuing to excite violent meridional paroxysms, may cause a determination towards the head inconsistent with life *.

For these reasons, we are under the necessity of applying to other remedies besides those which we have prescribed for milder cases, in which we apprehend no danger.

4. To procure immediate relief from the excessive anxiety and restlessness of putrid fevers, there is no
remedy

* I have been fortunate enough to meet with very few cases in which the more violent forms of these fevers have proved fatal ; but, in almost all of them, life seemed to be destroyed by the injury done to the brain during the violence of the paroxysms ; and not by any general putrefaction or dissolution of the fluids, or of the solid parts.

In some cases, the whole powers of life seemed to be entirely overpowered and destroyed at once, as if it were by a poison ; and, in all these cases, there was great reason to suspect a large absorption of putrid matter from the intestines. When putrefaction takes place in other parts of the body, by which life is destroyed suddenly, it is probably by an absorption of putrid matter from these parts operating in the same way.

remedy so powerful and certain as *opium* ; and we refer its effects to the power it possesses of destroying the sensibility and excitability of the system ; and of thus rendering it, in a great degree, defended against the action of the morbid particles circulating with the blood ; to which cause we are inclined to ascribe the violent spasmodic affections of the vascular system, which produces that dangerous determination to the head in the course of the meridional paroxysms we so much dread.

5. To prevent the putrefaction of the mucus, and the mortification it may induce, and also to put a stop to the meridional paroxysms, we are acquainted with no remedy so powerful and certain as the *Peruvian Bark*, especially in substance. After the experiments * that have been made upon it, it cannot be doubted that it possesses the property of correcting the putrefaction of the mucus ; and that, by being applied immediately to the bowels themselves, it will likewise prevent their mortification : And its power of suppressing the meridional

* Vid. Alexander's Experiments, &c. &c. &c.

dional paroxysms, by some mode of acting not so easily explained, is no less certain. Perhaps it may act by entering into the blood, and correcting the nature of the putrid particles ; which probably produce the spasmodic state, by pervading and irritating the whole vascular system :—Or, perhaps, the spasmodic state may depend more particularly upon the putrid particles being allowed to enter into the minute vessels of the brain ; and perhaps the bark produces its salutary effects, not only by correcting the putrid particles, but by strengthening and contracting the vessels of the brain, so as to prevent them from being admitted.—But, in whatever mode the bark produces its effect, it ought to be considered as an infallible security against danger in these fevers, when given in sufficient quantity. For, although it may fail to stop the meridional paroxysms during the first lunar periods *, even when
given

* Several late observations made in India, since I came to be better acquainted with the theory of the sol-lunar influence, incline me to suspect that this is generally the case in the more violent forms of the putrid remitting fevers of that country ; and
that

given in large quantities, for several days, yet let it not, on this account, be distrusted or discontinued ; for, in the space of 20 years, I cannot say that I have met with any case, in which I conceived it to be properly administered, and in sufficient quantity, where it ever failed of securing the patient in the end.

From these premises, therefore, respecting the cure of putrid intestinal remitting fevers, without local affection in their more violent and dangerous forms, we are led to the following general rules.

R U L E

that many instances of sudden and complete *final crises*, which were ascribed to the virtue of the *bark alone*, were *in part due to the decline of the sol-lunar influence, concurring to assist it at the commencement of the inter-lunar interval*.—And, perhaps, it may be discovered hereafter, that many other wonderful and unexpected *crises*, in other disorders attended with fever, (in the *dropsy*, for example), attributed at this day to the power of certain medicines, have been really owing to the same cause.

R U L E I.

That the Rules already proposed, in treating the mild and safe forms of these fevers, for stopping the fever, if possible, in the very beginning; for evacuating the bowels effectually with calomel and the laxative solution; and for giving nourishment, are to be observed strictly during the two first days of such forms as may threaten to be violent and dangerous: That, on the morning of the third day, immediately after the operation of the morning laxative, in order to check putrefaction, suppress the violence of the mercurial paroxysms, and give security against a failure of the strength, or any unfavourable turn in the fever, the bark is then to be exhibited in substance, and to be continued † for two days in such doses as to*
throw

* By Tart. Emet.

† In 1769, very soon after my arrival in India, I was fortunate to discover the wonderful efficacy of
 R the

throw in at least 12 drams or 2 ounces before the expiration of the second day : That then the calomel is to be repeated at bed-time, and the laxative in the morning : That, immediately after the operation of the morning laxative, the bark is again to be reiterated for two days, just as before : That the calomel and laxative are again to be repeated ; And so on, until the fever give way ; after which, it is sufficient to support the effect of the powder by a few doses of the decoction given daily, and to repeat the laxative solution every second or third day, as occasion may require.

R U L E

the bark in substance in curing the putrid intestinal remitting fever of Bengal, commonly called the *Pacca Fever* ; and, at the same time, the perfect safety of giving it during the height of the meridional paroxysms, whether nocturnal or diurnal ; and consequently the great danger and *insatiation* of waiting for a spontaneous remission of the fever. The bark may be given in wine, or wine and water, just as the strength may seem to require it.

R U L E II.

*That, to prevent the bark from being thrown up,
or passed by stool, and also to make nourishment
sit upon the stomach, and to procure ease and re-
pose, opiates are to be given freely.*

1. By observing these rules, I have treated the putrid fevers of India with great success; and we conceive that, with a little variation, they will be found applicable to every form of these disorders attended with danger.

S E C T.

S E C T. II.

OF THE GENERAL RULES FOR CURING PUTRID
INTESTINAL REMITTING FEVERS WITH LOCAL
AFFECTION.

A R T. I.

IN THEIR MILD AND SAFE FORMS.

XLVIII.

1. In treating of the arrangement of putrid intestinal remitting fevers, in the beginning of this dissertation, it was observed, that all the disorders we had met with in India, under the form of dysentery, and most of those under the form of pleurisy, peripneumony, acute rheumatisms, and many other local affections attended with fever, were nothing more than so many different cases of putrid intestinal remitting fevers accompanied with different local affections; and therefore to be distinguished from each other in this respect alone. Agreeable to these ideas, we arranged
all

all putrid intestinal remitting fevers under the two following divisions, viz.

1st, *Putrid intestinal remitting fevers without local affection ;*

2d, *Putrid intestinal remitting fevers with local affection.*

And we concluded, that the proper method of treating all putrid remitting fevers was exactly the same, except in these respects where their different local affections require remedies peculiarly suited to their nature.

2. Upon this general principle, we therefore proceed now to consider more particularly the treatment of putrid intestinal remitting fevers with local affection, which we subdivide likewise into two classes, viz.

a. *Those that are mild and safe ;*

b. *Those that are more violent and dangerous.*

3. In the milder and safer cases of putrid intestinal remitting fevers with local affection ; whether dysenteries, pleurifies, peripneumonies, or rheumatisms, &c. the treatment prescribed for the mild and safe cases of putrid intestinal remitting fevers without local affection,

has

has been found to be perfectly sufficient and proper ; without any other addition than that of keeping the whole body, and especially the parts affected, better defended from cold ; and of using other means to produce and support a gentle perspiration.

We therefore propose the following general rules for the cure of the safe and mild forms of putrid intestinal remitting fevers *with* local affection.

R U L E I.

That they are to be treated exactly according to the general rules laid down for treating the mild and safe forms of putrid intestinal remitting fevers without local affection.

R U L E II.

That the whole body, and especially the parts affected, are to be better defended from cold, than
when

when there is no local affection; and other means used to promote and support a gentle perspiration.

XLIX.

1. These are all the rules that seem to be required for curing putrid intestinal remitting fevers *with* local affection, when they appear in forms that are *really safe and mild*. But as I have been deceived in cases of this kind, and as the method of giving the bark in the manner recommended for the cure of the more dangerous forms of putrid intestinal remitting fevers *with* local affection, (vid. L. and Rule I. II. and III.) gives great security, and is attended with no inconveniency to be put in opposition to the advantage; I here, also, recommend it earnestly to every young practitioner, to proceed upon the supposition, that none of these fevers, however mild their appearance, are free of danger, and to treat them, on every occasion where there is the smallest doubt, as nearly as the circumstances will admit, according to the rules laid down for curing them

when

when they appear in forms that are more evidently violent and dangerous.

A. R. T. H.

IN THEIR MORE VIOLENT AND DANGEROUS FORMS.

L.

1. Considering the infectious nature of these fevers, it is probable that no constitution whatever is secure or exempted from their attacks ; and that they are therefore often produced in the highest degrees of inflammatory diathesis, where there does not exist the smallest tendency to any putrid disorder ; and of this I think I have seen many instances in the course of my practice. But, however phlogistic the constitution, I have very seldom and almost never, judged it necessary in India, *to draw blood* when there was no local affection ; and have found it sufficient to proceed according to the rules laid down for treating the more violent and dangerous forms of putrid intestinal remitting fevers without local affection. On the other hand, when the
symptoms

symptoms of inflammation fixed themselves violently and obstinately on any particular part, I have never hesitated (at the *beginning* of the disease,) to use the lancet ; especially if they did not yield to the remedies that are recommended at this time. The loss of blood, both general and local, is very effectual in removing these partial affections ; and, when it fails, it prepares the way for a freer exhibition of opium to alleviate the pain, and of bark to suppress the fever ; by the violence of which, these partial affections are often supported and aggravated, more than by any topical cause. When the local affection proves so obstinate as to resist all ordinary means, *blisters* are then applied to, and produce often surprising effects. But, since I began to regulate my practice by the rules which I have so fully explained, I have seldom had occasion to employ them ; and I have considered it as an improvement of some consequence, independent of its success, to be able to avoid so painful a remedy.

From these reflections we deduce the following general rules for curing the more violent and dangerous

S

forms

forms of putrid intestinal remitting fevers with local affection. .

R U L E I.

That they are to be treated exactly according to the general rules laid down for curing the more violent and dangerous forms of putrid intestinal remitting fevers without local affection.

R U L E II.

That the whole body, and especially the parts affected, are to be more carefully defended from cold than when there is no local affection; and other means used to promote a general perspiration.

R U L E

R U L E III.

That bleeding and blistering are to be administered when indicated by the violence and obstinacy of the local affection ; especially when it is seated in any vital or important part ; taking care to obviate the failure of the general strength, which is apt to succeed the loss of blood, by an immediate exhibition of the bark, wine, and nourishment.

S E C T. III.

OF THE VARIATION REQUIRED IN THE TREATMENT OF PUTRID INTESTINAL REMITTING FEVERS, BY THE CHANGES PRODUCED IN THEIR NATURE AND TENDENCY AT THE EQUINOCTIAL PERIODS, AND INTER-EQUINOCTIAL INTERVALS.

II.

1. Under this head, I have only to say, in general terms, that the variation which we have spoken of, at the equinoctial periods, particularly the autumnal, and its respective inter-equinoctial intervals, seem to suggest no other alteration in the mode of treating putrid intestinal remitting fevers at these times, except, perhaps, a *more* or *less* expeditious and vigorous application of the means we have already recommended in the foregoing rules.

F I N I S. B

THE following application of these general observations to the cure of a Putrid Intestinal Remitting Fever, with an Affection of the Bowels, or, in other terms, a Dysentery, is here annexed, because it has been found to be singularly successful in a disorder, which is, above all others, destructive to Europeans in warm climates; and may, at the same time, serve in some degree to illustrate the tenor of our practice in every kind of Putrid Intestinal Remitting Fever, whether with or without local affection.

I.

R. Tart. Emet. gr. iv. solve in

Infus. Fruct. Tamarind. cum Man. lib. ij. et

Sign. The emetic solution to be used instantly upon the first appearance or apprehension of the disorder, and to be given in small wine glassfull's, every half hour, until it has operated freely, both upwards and downwards.

II.

R. Calomel. gr. viii.

Opii Pur. gr. ii.

Syr. Cois. q. s. u. f. pil. No ij. et

Sign. A dose of calomel to be given at bed-time (8 o'clock) on the first day of the disorder, and to be continued for 4 or 5 nights following, or longer, if the bilious and putrid nature of the stools should seem to require it; and to be repeated at any time in the course of the disease, when judged necessary *.

The

* In common cases of the remitting putrescent fever, without dysenteric symptoms, I omit the opium ;
and,

The opium is united with the calomel, not only to make it fit on the stomach, but to procure rest. The quantity may therefore be increased at pleasure, to secure this effect, and the opiate must be continued every night after the calomel is intermitted.

III.

and, for several years past, it has been my practice to give from 5 to 8 grains of calomel, with an addition of 8 or 10 grains of extractum catharticum, or some such purgative, for a dose, to be repeated every night, or rather every other night, for four or five times, at the beginning of the disorder. And, as the opium, I suspect, interferes with the operation of the calomel, this purgative should likewise be preferred at the beginning of dysenteries, where the gripes, &c. are not severe and troublesome; and where the addition of opium is not absolutely necessary for giving the patient some respite in the night.

III.

℞. Sal. Cathart. Amar. ʒx.

Crem. Tart. ʒfs.

Mannae. * ʒij. solve in

Aq. Font. lib. ii. et adde

Tart. Emet. gr. i. M. et

Sign. The laxative phyfic, of which a wine glafsfull is to be given every day, from the firft attack of the difeafe, until it begins to give way, at 5 in the morning, and continued every hour until it has operated freely. After the fymptoms have begun to abate, it will be fufficient to keep the bowels gently open with fmaller dofes of the fame medicines. But this muft be done in the morning daily, through the whole courfe of the difeafe.

Caftor oil, or any other laxative more agreeable to the patient, may be fubftituted occasionally. But caftor
for

* Honey or fugar may be fubftituted ; but it is much better to make the folution without any of thefe fweets, and to add them, if they fhould be required, to cover the tafte of the falts occasionally.

tor oil is, above every medicine, useful, when there is much tenesmus and signs of great constriction on the bowels, and then an opiate should be given previously, to make it sit on the stomach.

IV.

℞. Laud. liquid. gtt. XL.

Aq. Menth. Pip. ℥i. m. f. haust. et

Sign. The quieting draught * to be given every day about *mid-day*, after the evacuation of the bowels has been well effected by the morning laxative; and the dose to be made sufficient for keeping the patient easy, and the bowels in a quiet state,
until

* In remitting putrescent fevers of every kind, there is no medicine so cordial and sedative as opium. In those unattended with dysenteric symptoms, I have generally contented myself with giving it in smaller doses than is here prescribed, along with the bark or snake-root. But, in all cases, the dose should be made sufficient to remove the restlessness which accompanies these fevers, and to compose.

until the time of taking the second opiate at bed-time.

When the rectum is much inflamed, emollient glysters give great relief; and, if the opiates prescribed should fail in their effect, an additional dose may be given in this form. And let it be recommended strongly to every patient labouring under a dysentery to force himself away from the chair the moment that the faeces which occasioned the call are evacuated. The straining that follows is always fruitless, and tends only to inflame the rectum still more. But, as the erect posture always increases the tenesmus, the best method of all is to receive the faeces upon clothes introduced below the patient, for that purpose.

V.

In the course of the day, the patient must be frequently nourished with panada, made in the manner recommended in the Treatise, and also in the night, if it should be necessary. Gruels, made of rice or oatmeal, are the most proper drink.

VI.

When the fever does not give way in three days to the above treatment,

R. Decoct. Cort. Peru. Fort. lib. ij.

Laud. Liquid. gtt. XL. M. et

Sign. The decoction *, of which give 3 ounces every hour, beginning after the mid-day opiate has settled

* Whenever I am anxious to suppress the fever immediately, I trust to the bark in substance only; and, when this is the case, the purgative and laxative medicines must be omitted for a day or two, until that be effected. I have prescribed the decoction in this Treatise only because it will be in general more acceptable to dysenteric patients, whose stomachs are delicate.

bled the stomach, and continue taking it through the night when awake.—When the fever is not alarming, bark is not absolutely necessary to the cure, but it gives great security in every case of fever and flux.

*A FORM constructed for recording Cases of Putrid
and Interlunar*

J O H N

A violent Putrid Intestinal Remitting Fever,
The Daily Reports and Recipe's.

1788.

June 1.	Report R.
2.	Report R.
3.	Report R.
○ 4.	Report R.
5.	Report R.
6.	Report R.
7.	Report R.
8.	Report R.
9.	Report R.
10.	Report R.
☉ 11.	Report R.
12.	Report R.
13.	Report R.
14.	Report R.

Intestinal Remitting Fevers, and marking their Lunar Changes.

A D A M S,

without Local Affection, of 21 Days.

The Lunar and Interlunar Changes.

The fever attacked at 11 A. M. on the 1st day of this period, with the common symptoms.

In the course of this period the fever increased daily, and rose to its greatest height towards the end.

On the first day of this interval, there was observed an evident abatement or remission in the violence of the fever.

About the middle, and towards the end of this interval, the remission or abatement in the violence of the fever was more considerable than at the beginning.

1st Lunar period.

1st Interlunar interval.

1788.

June 15. Report

R.

16. Report

R.

17. Report

R.

● 18. Report

R.

19. Report

R.

20. Report

R.

21. Report

R.

22. Report

R.

23. Report

R.

24. Report

R.

25. Report

R.

€ 26. Report

R.

27. Report

R.

28. Report

R.

29. Report

R.

*

30. Report

R.

N. B. In records intended for use, many more than one line will be required for the Reports and Recipe's of one day. These are only intended to shew the form.

* I explain how this *interval* comes to contain 8 days, Vid. pag. 42.

2d Lunar period.

About the beginning of this period the fever became again more violent than it had been during the preceding interval.

In the course of this period the fever increased, and was most violent towards the end.

2d Interlunar interval.

On the commencement of this interval, there was again observed a remarkable remission in the violence of the fever, and in the course of the interval it gradually subsided and disappeared, and did not return with the succeeding lunar period.

N. B. These remarks are only inserted as examples to shew the use of the form ; but any other of this kind may be inserted at pleasure.

CORRIGENDA, &c. &c.

In the Preface,

Page

- ix. The observation respecting Dr Cullen having been made since my arrival in England ought to have been inserted as a note at the bottom of the page.

In the Operis Conspectus,

- xxvi. l. 13. after *mild* insert *and*

In the Treatise,

25. beneath the title of Sect. I. insert XI.
111. in Rule II. l. 3. for *vomitings* read *vomiting*

TO THE BINDER,

Plate I. facing page 46.

Plate II. facing page 66.

